

**NANYANG
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**Traces from a Kampong: A Survey of Chinese
Porcelain from the Nineteenth and Early Twentieth
Centuries Recovered from Istana Kampong Gelam**

**NG SHAO-EN SHAWN
SCHOOL OF HUMANITIES**

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Traces from a Kampong: A Survey of Chinese
Porcelain from the Nineteenth and Early Twentieth
Centuries Recovered from Istana Kampong Gelam

NG SHAO-EN SHAWN


School of Humanities

A thesis submitted to the Nanyang Technological University in partial
fulfilment of the requirement for the degree of Master of Arts

2023


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ABSTRACT

Chinese porcelain excavated from the Istana Kampong Gelam (IKG), a Malay palace in Singapore, offers a unique opportunity to examine Chinese ceramics within a nineteenth and twentieth-century context. Although officially considered part of an early Malay settlement, historical records reveal the Istana's integration into a culturally diverse urban centre from the nineteenth century onwards, complicating the determination of its porcelain consumers. This thesis develops the first typology of Chinese porcelain from nineteenth and early-twentieth century Singapore, aimed at expanding the field of historical archaeology in Singapore. The primary goal of this typology is to identify the types of Chinese porcelain accessible to IKG's consumers. Comparative analyses involving overseas sites, including Market Street Chinatown in California and Cangdong Village in Guangdong Province, underline the potential breadth of analysis for such archaeological materials. In so doing, Chinese porcelain sherds from IKG are studied locally and within a global context, assessing resemblances and distinctions from overseas materials that may imply the extent of shared networks within the nineteenth-century porcelain industry.

CHAPTER ONE INTRODUCTION

Ceramics recovered from archaeological sites offer advantages in historical studies in cases where written records of its inhabitants are scarce. They sometimes provide traces of both local experiences and exchanges on a global scale if one can unravel what ceramics were produced, imported, sold, and consumed at specific locations. A study about a ceramic object's physical traits, production, and distribution might be informed by references to the documentation of similar ceramics. Data on ceramics and similar archaeological materials provides valuable information for understanding both a historical site and its inhabitants.

This thesis studies the Chinese porcelain recovered from Istana Kampong Gelam (IKG), an old Malay palace that housed the descendants of the Sultan from the nineteenth to early twentieth centuries. The main question in this study is: what types of Chinese porcelain were accessible to the inhabitants of IKG? While this question is seemingly concerned with the consumers of Chinese porcelain in the palace during the nineteenth and early twentieth centuries, its consumers in fact remain indeterminable. This complication stems from IKG's close proximity to the bustling urban centre of Kampong Gelam, a culturally diverse "Malay" district that flourished as a hub for foreign trade, an assortment of businesses, and a crossroad for migrant communities. In the twentieth century, part of the palace compound was rented to outsiders who built ramshackle dwellings there. This pattern may have already existed earlier. Consumers of Chinese porcelain at IKG were unlikely ethnically singular. This study presents an object-centred history that offers a glimpse into the lives of consumers whose records are traces of fragmented sherds pieced together by the documentation of identifiable Chinese porcelain.

This study also attempts to investigate Chinese porcelain at IKG from a global perspective, acknowledging its widespread distribution in the nineteenth and early twentieth

centuries. Two other overseas archaeological sites, Market Street Chinatown in California, and Cangdong Village in Guangdong Province, provide comparative Chinese porcelain collections with distinguishable groups of Chinese consumers. The goal of this comparative analysis is to identify the similarities and differences between sherds retrieved from IKG, which can potentially be attributed to a diverse group of consumers, and the two overseas sites with historically distinct Chinese communities. Consequently, these comparisons provide relative context to the proportions of Chinese porcelain distribution and consumption at IKG. The comparative analysis of ceramics between sites investigates the hypothesis that the culturally diverse surroundings of IKG in the nineteenth and early twentieth centuries resulted in a wider variety of Chinese porcelain, as opposed to Market Street Chinatown and Cangdong Village, which had more homogenous Chinese communities.

These analytical and interpretive steps to the study of Chinese porcelain require a classification system that supports the assessment of archaeological material. The primary objective of this thesis is to develop a typology of Chinese porcelain from the nineteenth to twentieth centuries in Singapore with sherds recovered from IKG. In so doing, a typology of commonplace Chinese porcelain in this period tackles the inadequate documentation of such wares in Singapore, which remains a hurdle in local historical archaeology.

The following segment of this chapter examines historical accounts of IKG and the surrounding neighbourhood through the nineteenth and early twentieth centuries. These accounts highlight the challenges of identifying the consumers of Chinese porcelain despite its presence within the palace grounds. Nevertheless, they provide valuable insights into the social environment where these porcelain wares were originally consumed and disposed of.

The Istana and the Kampong

The English-born naturalist George Bennett visited a “poor-looking bungalow, surrounded by high walls, exhibiting effects of age and climate” in 1830.¹ In his revisit to the building in 1833, he observed significant improvements in the architecture of the compound, which closely resembled the architectural façade adopted by European residents in Singapore.² Bennett’s description of the old Istana and its surrounding buildings captures the rapid changes of the palace complex at Kampong Gelam over a short period of time. Nonetheless, the IKG building that is today preserved as the Malay Heritage Centre was only completed and ceremoniously handed over to Tengku Alam by the colonial government in 1890.³ In 1897, the colonial government reclaimed the land in Kampong Gelam that was initially given to Tengku Ali (father of Tengku Alam).⁴ Malay royalty experienced a decline at the turn of the century. The land that had once represented monarchical power became occupied by squatters.⁵

The Istana remained the heart of Kampong Gelam within the royal citadel of Kota Raja well into the twentieth century. However, the palace compound had lost its former grandeur and was often referred to by Kampong Gelam residents as the “palace of cat's droppings,”⁶ despite the descendants of Sultan Hussein (father of Tengku Ali) maintaining their residence in the Istana until 1999. The deteriorating image of the Istana, as perceived by the community, suggests that the vicinity of IKG was not exclusively accessible to the royal descendants but potentially served as a communal space open to the inhabitants of Kampong Gelam. In fact, the garden of IKG was frequently used as a congregational space for events that attracted the Malay community and those of other ethnicities. Occasions shared by the residents of

¹ George Bennett, “A Visit to the Rajah,” in *Travellers’ Tales of Old Singapore*, compiled by Michael Wise (Singapore: Marshall Cavendish Editions, 2008), 27.

² Bennett, “Visit to the Rajah,” 28.

³ “Tungku Allum’s New House,” *Straits Times Weekly Issue*, 20 August 1890, microfilm reel NL5210, National Library Board.

⁴ Hidayah Amin, *Leluhur: Singapore’s Kampong Gelam* (Singapore: Helang Books, 2019), 74.

⁵ Amin, *Leluhur*, 73.

⁶ Amin, *Leluhur*, 74.

Kampong Gelam on the Istana's grounds include the celebration of Prophet Muhammad's birthday,⁷ bi-monthly concerts organised by the Kota Raja Club,⁸ and *wayang* (a theatrical Javanese puppet performance) performances.⁹ These frequent activities in the twentieth century could have contributed to archaeological findings on the surface of IKG. Events organised by clubs in Kampong Gelam, which were encouraged by the residents of the Istana, limits this thesis from determining who were the consumers of Chinese porcelain recovered from the palace grounds due to the variety of people that accessed the compound. This is especially the case, considering the intermingling of ethnic communities that were participating in trade, mutual businesses, and shared residences.

Identities beyond a Malay Settlement

Kampong Gelam in the early nineteenth-century was characterised as one of the first Malay settlements where *gelam* (*Malaleuca Leucadendron*) trees grew and fishermen of Buginese ethnicity from Indonesia lived.¹⁰ This seemingly insular and isolated image of a Malay settlement is juxtaposed with an account by the English navigator, George Windsor Earl, between 1833 and 1834. He describes in his travelogue, *The Eastern Seas* (1837), the diverse inhabitants of Kampong Gelam:

Near the residence of the Sultan he will meet with Malays, lounging about...There Chinese mechanics will be busily employed forging ironwork, making furniture, or building boats; and the level green near the sea will be occupied by Bugis, who have landed from their prahus to mend their sails, or twist rope and cables...a portion of the back part of the campong, natives of

⁷ Jamiyah, *Commemoration of the 50th Anniversary of Jamiyah* (Singapore: Jamiyah, 1982), 33.

⁸ Hajah Yuhanis binte Haji Yusof, "Communities of Singapore (Part 3)," 17 June 1993, accession number 000459, disc 4, National Archives of Singapore.

⁹ Amin, *Leluhur*, 68.

¹⁰ Ellen Lou, "Conserving the Ethnic Enclave: The Case of Kampong Glam in Singapore," (MA Thesis, University of Singapore, 1980), 20 – 22.

Sambawa... will be found chopping young trees into billets for fire-wood... in another, Bengali washermen hanging out clothes to dry... Klings will occasionally be encountered conducting tumbrils drawn by buffaloes cased in mud and dirt... Each nation, indeed, is found pursuing avocations which best accord with its tastes and habits...¹¹

His illustration of a diverse population, actively engaged in various occupations at Kampong Gelam, is descriptive of a vibrant urban centre concentrated with various ethnicities. A *Straits Times*' article in 1896 similarly captures Kampong Gelam as a global trading hub by describing it as Singapore's "World's Fair."¹² The author notes that among foreign and locally manufactured apparels, home appliances, and art, were "cutlery, crockeryware, glassware, and enamelled cooking utensils, which [were] to be had at equally low prices."¹³ Kampong Gelam was characterised by its variety of trade goods and strong presence of commerce, which were attributes of Singapore's interconnected maritime industry.

Kampong Gelam experienced an influx of Chinese immigrants in the nineteenth century. Earl notes in his travelogue that "five thousand to eight thousand emigrants arrive[d] annually from China" at Kampong Gelam.¹⁴ Some of these Chinese were notorious for their illegal gatherings, such as those conducted by secret societies that were commonly represented by the "tribes" of "the Amoy, the Kheh, Teouchoo, and the Macao."¹⁵ Illegal organisations attracted unlawful activities. Two opium shops in Kampong Gelam were known to have opened in the 1820s.¹⁶ While opium smoking was not illegal, an opium regulation was passed in 1830, which controlled the farming, preparation, and selling of opium in both Singapore and Hong Kong.¹⁷

¹¹ George Windsor Earl, "Occupations," in *Travellers' Tales of Old Singapore*, compiled by Michael Wise (Singapore: Marshall Cavendish Editions, 2008), 30.

¹² "Round Kampong Glam," *The Straits Times*, 23 June 1896, microfilm reel NL339, National Library Board.

¹³ "Round Kampong Glam."

¹⁴ Earl, "Occupations," 30 – 31.

¹⁵ "Secret Societies," *The Singapore Free Press and Mercantile Advertiser*, 8 November 1923, microfilm reel NL1984, National Library Board.

¹⁶ Charles B. Buckley, *An Anecdotal History of Old Times in Singapore, Vol. 1* (Singapore: Singapore Free Press, 1902), 64.

¹⁷ James R. Logan, *The journal of the Indian Archipelago and Eastern Asia, vol. II* (Singapore: J. R. Logan, 1848), 8 – 9.

Other strategic regulations, such as the prohibition of gambling in opium shops and the restriction of opium smoking in unauthorised spaces after 9 o'clock at night, were implemented to address the widespread vices associated with opium consumption.¹⁸ Wealthier Chinese and Jews took advantage of the profitable opium market, which contributed to the deadly smoking addictions prevalent among a predominantly impoverished and malnourished population.¹⁹ Meanwhile, Europeans benefited from the taxes imposed on opium that took the focus away from commerce in which they were involved.²⁰ Crimes and vices in Kampong Gelam were sometimes a collaborative effort between ethnic communities. For instance, seven Malays were once arrested for being part of a Chinese secret society at Kampong Gelam in 1894.²¹ Unlawful activities conducted by certain Chinese groups and other individuals present a contrasting image of Kampong Gelam from the common perception of an inward-looking Malay neighbourhood.

The vicinity of IKG consists of back lanes, shophouses, and residences that were also communal dwellings for various ethnic groups. For example, the Pondok Jawa (figure 1.1; south of IKG), which was a bungalow initially built to house migrants from Java, eventually held social events that showcased Javanese culture with the frequent display of *wayang wong* (classical dance theatre originating from Java), *wayang kulit* (a traditional Javanese puppet performance), and the sales of *satay* (meat skewers) and *mee rebus* (egg noodles).²² These social gatherings were open to people of all ethnicities and contributed to the intermingling of communities.

¹⁸ Logan, *Indian Archipelago*, 10.

¹⁹ Hans Derks, *History of the Opium Problem: The Assault on the East, ca. 1600 – 1950*, vol. 105 (Leiden and Boston: Brill, 2012), 45.

²⁰ Derks, *Opium Problem*, 45.

²¹ “Romanized Malay Version,” *Daily Advertiser*, 14 July 1894, microfilm reel NL2436, National Library Board.

²² Amin, *Leluhur*, 96 – 97.

The majority of shophouses were residences where businesses were regularly conducted.²³ A long-time resident at Kampong Gelam in the early twentieth century revealed that it was a common practice to have several families living in a single shophouse.²⁴ These shophouse residences were venues for various businesses, including copper, iron, and stone works, which were initially undertaken by Javanese residents and later adopted by the Chinese community.²⁵ The transfer of occupations from one ethnic group to another signals the communication of peoples within the residential area. Chinese in Kampong Gelam were also opportunistic businessowners who acquired other languages, such as Malay and Javanese, as they intermingled and catered to the needs of other ethnic groups along Jalan Sultan.²⁶

Other residences such as the Kota Papan and Gedung Kuning were establishments that stood on the periphery of the royal precinct along Sultan Gate. The Kota Papan, which were initially huts inhabited by workers from Terengganu, Malaysia, were later taken over by a Chinese family.²⁷ The Gedung Kuning was built in mid-nineteenth century for Tengku Mahmud (grandson of Sultan Hussein) before it became a private property in 1907.²⁸ Its home owners were several Chinese families and family members of a Malay businessman named Haji Yusoff, who rebought the house after he sold it once in 1919.²⁹ Four generations of Haji Yusoff's family resided in the Gedung Kuning until the Singapore government acquired the land and property in 2000.³⁰ Homeowners of these residences closest to the Istana were not exclusively Malays.

²³ Amin, *Leluhur*, 109.

²⁴ Mohamed Sidek bin Siraj Haji, "Communities of Singapore (Part 3)," accession number 001255, disc 4, National Archives of Singapore.

²⁵ Mohamed, "Communities of Singapore."

²⁶ Mohamed Sidek bin Siraj Haji, "Communities of Singapore (Part 3)," accession number 001255, disc 5, National Archives of Singapore.

²⁷ Amin, *Leluhur*, 101.

²⁸ Amin, *Leluhur*, 101.

²⁹ Hidayah Amin, *Gedung Kuning: Memories of a Malay Childhood* (Singapore: Helang Books, 2021), 32.

³⁰ Amin, *Gedung Kuning*, 172.

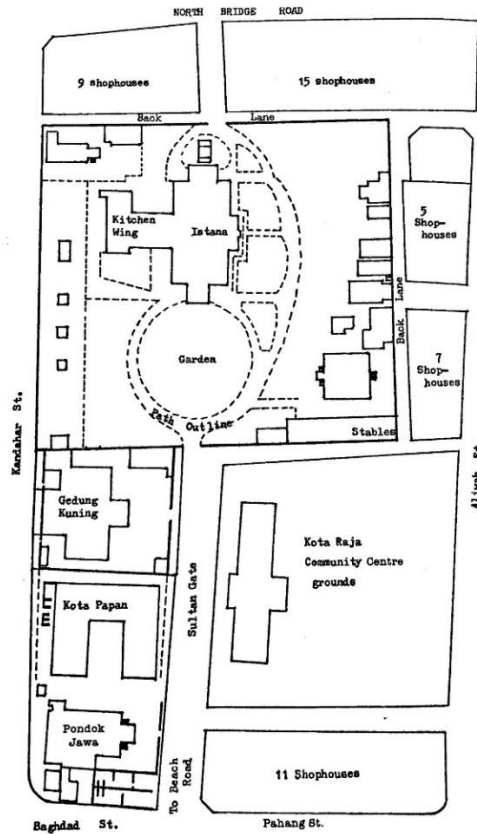


Figure 1.1 Cadastral map of IKG and its vicinity (1935).³¹

The environment of Kampong Gelam was by no means an isolated Malay town. The various occupations, entrepreneurial activities, and social engagements among different ethnicities portray Kampong Gelam as a dynamic urban centre. The task of determining the consumers of Chinese porcelain without relevant documentation of specific groups of people in a diverse social environment is unproductive. However, the types of Chinese porcelain at IKG are unique to the site in the nineteenth and twentieth centuries, considering their recovery from the crossroads of a Malay neighbourhood, that has also been characterised as a world's fair and a diverse urban centre. The ceramic assemblage at IKG also uncovered a substantial proportion of European ware that was larger than the quantity of Chinese porcelain. The mixture of ceramics suggests that there were possibly multiple groups of consumers that

³¹ Pang Keng Fong, "The Malay Royals of Singapore," (Department of Sociology, National University of Singapore, 1984).

contributed to the Chinese porcelain sub-semblage at IKG. While a comprehensive survey of the entire ceramic assemblage from IKG offers an in-depth investigation of the types of wares accessible to consumers at the site, the limitations of length and time in composing this thesis prevent such an extensive study. Such a research endeavour is suited for a PhD dissertation. Thus, the objective of this thesis is twofold: firstly, to identify and categorise the Chinese porcelain that was accessible to the people at Kampong Gelam, and secondly, to examine the similarities and differences between the Chinese porcelain recovered from IKG and overseas archaeological sites with a clearly defined group of Chinese consumers.

Summary of excavation at IKG

Archaeological excavation at IKG commenced in March 2000 and lasted till September in the same year. Five squares were plotted and dug up across the compound after a pedestrian survey that resulted in the recovery of several surface sherds.³² Squares I to IV were divided into sub-squares in a grid, while square V located at an isolated corner that originally functioned as stables was divided into eight sub-squares of unknown positions.³³ Squares VI to XI were excavated in 2003, though their exact locations within the palace grounds were not recorded. This thesis uses the data collected from the main excavation conducted between March and September in 2000. However, some artefacts from squares VI to IX recovered in 2003 were included in the collection. A standard practice of a more contextual overview of the assemblage. The quantification of artefact distribution is possible with the archaeological metadata recorded during the recovery of the sherds. Table 1.1 illustrates the number of Chinese porcelain sherds

³² Geok Yian Goh and John N. Miksic, "The IKG Log," The NUS Press Singapore, accessed July 16, 2023, <https://epress.nus.edu.sg/sitereports/ikg/text/log/>.

³³ Jennifer Barry, *Istana Kampong Glam: Archaeological excavations at a nineteenth century Malay Palace in Singapore* (Stamford, UK: The Rheidol Press, 2007), 20.

distributed across the respective squares. Salvaged sherds and those found in squares VI to IX are categorised under the “others” column.

Square	I	II	III	IV	V	Others	Total
Sherd count	63	206	0	715	65	471	1520
%	4.14	13.55	0	47.04	4.28	30.99	100

Table 1. 1 Distribution of Chinese porcelain sherds in excavated units.

Square I (15 x 20 meters) was divided into 30 smaller units (5 x 2 meters) and situated at the front of the Istana,³⁴ which served as a gathering spot for numerous events organised in the palace grounds. Square II (15 x 20 meters) was divided into 30 smaller units (5 x 2 meters) and located in the west wing of the Istana, uncovered a significant depth of artefacts.³⁵ Square III (15 x 20 meters) was divided into 30 smaller units (5 x 2 meters) and positioned north of the palace compound, characterised by the presence of various construction materials.³⁶ Square IV (10 x 20 metres) was divided into 20 smaller units (5 x 2 metres) and located east of the Istana, along a row of large mango trees.³⁷ Square V was a 5 x 2 metre unit that uncovered a set of rocks that could have been part of a foundation.³⁸

A significant number of Chinese porcelain sherds were recovered from squares II and IV (table 1.1). Barry suggests that these squares could have been rubbish pits due to twentieth-century sherds recovered from the deepest spits that would technically not have been associated with ceramics from an older period according to the law of superposition.³⁹ The assortment of other European and Asian artefacts in these squares also suggests an accumulation of what

³⁴ Geok Yian Goh and John N. Miksic, “Site Plan,” The NUS Press Singapore, accessed July 18, 2023, <https://epress.nus.edu.sg/sitereports/ikg/text/siteplan>.

³⁵ Goh and Miksic, “Site Plan.”

³⁶ Goh and Miksic, “Site Plan.”

³⁷ Goh and Miksic, “Site Plan.”

³⁸ Goh and Miksic, “Site Plan.”

³⁹ The law of superposition explains that the deepest or lowest stratigraphic layer should be associated with the oldest layer of soil and thus, oldest artefacts. This means that the layers above the lower layer should then be a younger stratigraphic layer. Barry, *Istana Kampong Gelam*, 131.

could possibly be trash. The Istana's frequent activities and limited security, as illustrated in the introduction to Kampong Gelam, suggest that communal litter may have been a common occurrence within the palace compound. This litter could have been inadvertently or deliberately buried in the ground over time.

CHAPTER TWO METHODOLOGY

Typological framework and definitions

The primary objective of this thesis is to develop a Chinese porcelain typology that presents the available archaeological material from IKG in a systematic and analytical manner to enable comparisons with similar assemblages in Singapore and globally. The Chinese porcelain sherds from the IKG assemblage remain a clump of disorganised archaeological material until it is ordered into manageable units of information. The typological classification is a technique that divides artefacts “according to perceived or measurable similarity between observed data and specific analytical units.”⁴⁰ This thesis follows David Clarke’s typological framework, which employs a hierarchical structure of archaeological entities to organise and illustrate the slivering of archaeological information.⁴¹ These archaeological entities include “attributes”, “artefacts”, and “types” ordered in an ascending sequence within the hierarchy.⁴²

An attribute is defined by human action performed with objects resulting in traces of human behaviour.⁴³ The material artefact then refers to a tangible object “modified by a set of humanly imposed attributes.”⁴⁴ Artefacts can be grouped into “homogenous population[s] [that] share a consistently recurrent range of attribute states”⁴⁵ to be labelled as an “artefact-type”. Artefact-types can be arranged into clusters known as type-groups and divided further into subtypes or varieties. Table 2.1 illustrates the hierarchical order of type categories and the other archaeological entities.

⁴⁰ Eugenio Bortolini, “Typology and Classification,” in *The Oxford Handbook of Archaeological Ceramic Analysis*, ed. Alice M. W. Hunt (Oxford: Oxford University Press, 2017), 652.

⁴¹ David L. Clarke, *Analytical Archaeology*, 3rd ed. (London: Routledge, 2015), 206.

⁴² Clarke, *Analytical Archaeology*, 206.

⁴³ Clarke, *Analytical Archaeology*, 153 – 154.

⁴⁴ Clarke, *Analytical Archaeology*, 152.

⁴⁵ Clarke, *Analytical Archaeology*, 206.

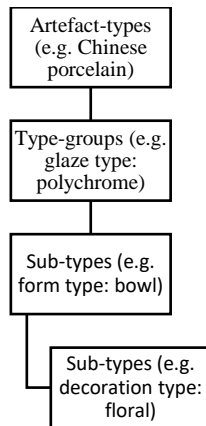


Table 2. 1 Hierarchy of archaeological entities. The number of artefacts is distributed down the order of hierarchy.

Data collection: sorting and data entry

An archaeological database provides the categorical information required for the development of a typology. The data collection of archaeological material is a post-excavation procedure that involves the recording of perceivable and measurable information from artefacts recovered from an archaeological site. Perceivable information includes the appearance of different materials, glazes, and designs. These categorical attributes used for identification will be further discussed in the typology chapter. Measurable information includes the diameter, thickness, and length of vessel parts, such as rims or bases of a porcelain vessel.

Ceramic sherds from the IKG assemblage were first identified as material produced between the nineteenth and mid-twentieth centuries, also referred to as the colonial period in the context of archaeology in Singapore. These sherds were classified into three types of ceramics – earthenware, stoneware, and porcelain – and then further sorted into general provenances based on their glaze, fabric, and design. Ceramic identification was supported with references to scholarly documentation and reports from previous archaeological projects conducted in Singapore and overseas sites from a similar period. Chinese porcelain sherds from the colonial period were sorted into respective vessel parts for further analysis. This categorical information was recorded onto an excel spreadsheet. Table 2.2 summarises the sequence of this process.

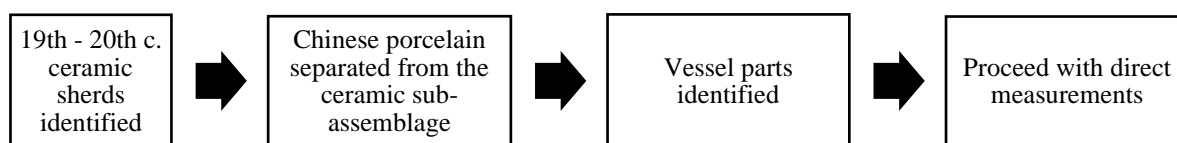


Table 2. 2 Sorting sequence of Chinese porcelain from the IKG ceramic sub- assemblage for the preparation of data collection.

Direct measurements are measurements recorded using a measuring instrument with a standard scale.⁴⁶ 1,520 Chinese porcelain sherds were identified and directly measured using various measuring instruments. The calliper and ruler were used to measure the length and thickness of feature sherds. A diameter chart was also used to measure the estimated diameter of sherds where the initial presence of a circumference was ascertained. This step was crucial in determining the minimum number of vessels (MNV), which involves the measurement of sherd circumference proportions (in percentages) relative to the diameter of complete vessels. The MNV count projects the minimum possible “number of original items that can account for the fragmentary specimens present in the archaeological assemblage.”⁴⁷ This process is deceptively simple since it is both a quantitative and qualitative method of organising archaeological data.⁴⁸ This paper follows the methodological recommendations by Barbara Voss, who emphasises the importance of assessing and grouping sherds based on their multiple traits or attributes.⁴⁹ Sherds with measurable diameters – such as vessel rims and bases – were first assigned groups with shared attributes. For example, a rim sherd identified as part of a bowl was grouped with other rim sherds of a similar decoration and size within a stipulated range of diameters. These MNV percentages were totalled in their respective groups to present

⁴⁶ Edward B. Banning, *The Archaeologist’s Laboratory: the analysis of archaeological data* (New York: Kluwer Academic, 2002), 14.

⁴⁷ Barbara L. Voss and Rebecca Allen, “Guide to Ceramic MNV Calculation Qualitative and Quantitative Analysis,” *Technical Briefs in Historical Archaeology*, Vol. 5 (2010): 1.

⁴⁸ Prudence Rice, *Pottery Analysis: A Sourcebook* (Chicago: University of Chicago press, 1987), 292 – 293.

⁴⁹ Voss, “Guide to Ceramic MNV,” 1.

the minimum number of possible vessels that were available at the IKG site. These percentages were rounded up to the closest hundredth percent to give the MNV count. For instance, if the rims of a bowl of a specific decoration type have a MNV percentage of 420%, this type of bowl has a MNV count of five.

The number of sherds and weights of various vessel parts and forms are also totalled to present different scales of illustration. The use of both sherd counts and weights were studied together due to each scale of measurement potentially presenting an error of perception if studied separately.⁵⁰ The number and weight of sherds can deceptively appear more significant with more fragmented or denser porcelain vessels respectively.⁵¹ Both measurements come together comparatively to provide a clearer picture of their relative abundance.

Data collection: MNV analysis and the development of a typological dataset

There are three main “types” discussed in this Chinese porcelain typology: glaze, decoration, and form types. Each of these types comprise intrinsic attributes that are inherent properties of the material artefacts, in contrast to extrinsic attributes that are external traits assigned by the researcher.

Porcelain glaze types were classified by their colour, complete or partial application, and surface appearance. Certain glaze types are not exclusive to Chinese porcelain. For instance, the blue and white glaze type, which commonly comprises a blue cobalt underglaze and a second layer of transparent glaze, can also be found in Japanese porcelains. The nuances in clay colour, hue of cobalt, decorative technique, and decoration types were considered in differentiating glaze-types and their provenances.

⁵⁰ John E. Byrd and Dalford D. Owens, “A Method for Measuring Relative Abundance of Fragmented Archaeological Ceramics,” *Journal of Field Archaeology* 24, No. 3 (1997): 315 – 316, accessed May 16, 2023, <https://www.jstor.org/stable/530687>.

⁵¹ Byrd and Owens, “Method for Measuring,” 316.

Decoration types were classified by their decorative attributes such as recurring design elements. Decorative attributes mainly consist of five design subjects: floral and plant motifs, animal motifs, Chinese characters or an abstract script, geometric patterns, and landscapes. These design elements vary stylistically and were identified in different configurations to form decoration types. Terminologies of decorative types adopted from archaeology literature for this thesis were determined primarily by the consistency of descriptions in established typologies and the historical accuracy of such terms. It is important to note at this point that the “historical accuracy” of design terminologies is still subjected to the limitations of the English-language historiography of Chinese porcelain. Nuances in terminology are bound to persist across translations and geographies.

Unique decorations refer to designs inadequately supported by scholarship or documentation of any kind. Visual analysis and comparative discussions of similar archaeological findings form the main approach for evaluating these sherds. The decision to record unfamiliar designs or outliers within the sub-assembly was grounded on the merits of exercising archival integrity in recognising that the smallest of data possibly retains important historical information. However, sherds with an apparent presence of decorative elements with no identifiable design subject (e.g., a smudged blue line) were labelled “indistinguishable” and were not discussed in the typology to avoid an inflation of MNV numbers.

Vessel form types were primarily classified by their structural appearance, which was informed by existing scholarship. Direct measurements of complete profiles (sherds with both rim and base but fragmented) and complete vessels (intact vessels) also provide quantitative structural information that help with the grouping of sherds with similar forms of a specific size. However, vessel forms were not strictly discussed in terms of measurements in this paper due to the large variety of sherds with different shapes and sizes. Instead, sherds were categorised qualitatively through an arbitrary but necessary comparison between similar vessel

forms identified throughout the sorting phase. The calculation of MNV in this thesis solely relied on rim measurements, as the sizes of bowls, cups, and plates were determined based on the ranges of rim diameter measurements shown in Table 2.3. As such, the MNV of all other forms adhere to this method to establish a standardised practice within the typology. In the scenario that vessel forms are identified without rims, the MNV count of that vessel form will always be the value of 1.

Rims were used instead of bases for the classification of bowl, cup, and plate sizes because bases possess a smaller range of diameter measurements. In this case, bases of these forms were not effective diagnostics in determining the MNV on an ordinal scale due to their smaller deviation between vessel sizes. For instance, both medium and large bowls ranging between 10cm and 20cm in rim diameters can have similar measurements for their base diameters. However, the reliance on rim diameters alone comes with its own limitations. Bases were typically thicker and less prone to fragmentation than rims. The calculation of base MNV proportions potentially leads to a higher sum of MNV, which provides a more accurate estimate of relative abundance. Nonetheless, MNV calculated with rim diameters were necessary for standardisation and comparative analysis of vessel forms with identical criteria of measurement.

Vessel form	Range of rim diameter
Bowls/plates	
Small	<10cm
Medium	10cm – 15cm
Large	>15cm – 20cm
Extra large	>20cm
Cups	
Small	<5cm
Medium	5cm – 8cm
Large	>8cm

Table 2. 3 Standardised ranges of rim diameter measurements for sizes.

Vessel forms without the applicability of diameter measurements, such as spoons, figurines and unidentifiable vessels marked as unknown types, did not qualify for the MNV assessment. Instead, these sherds were grouped by their decorative attributes and presented in terms of total sherd count and weight.

Accuracy, defined as the "degree of bias in measurement,"⁵² was a lesser concern when dealing with porcelain sherds in comparison to softer fabrics commonly found in certain stoneware and earthenware compositions. These softer fabrics typically exhibit a coarser and more brittle nature. Such fabrics easily degrade, often leading to worn and irregular surfaces that can pose challenges for accurate measurements. Nonetheless, some criteria were implemented to enhance the accuracy of measurements for porcelain sherds.

Diameter proportions with less than a MNV percentage of 3% were considered too small for measurement. These sherds were disqualified from MNV calculations and quantified solely by total sherd count and weight. This criterion was only applied to sherds with a diameter lesser than 20cm since larger vessels were easier to measure. Rim, mouth, lid, and base sherds with completely broken lips or foot rims were also disqualified from MNV calculations to prevent cumulative error. Bases without the traces of foot rims were labelled as "flat parts of bases" to indicate that the diameter of the base cannot be measured.

The discussion of attributes and the consolidation of measurements contribute to the descriptive and quantitative presentation of the Chinese porcelain sub-semblage and its typology. Each of these categories represents the different *types* of porcelain that were accessible to inhabitants at IKG. The overall hierarchical structure of the typology in this thesis can be summarised in Table 2.4.

⁵² Banning, *Archaeologist's Laboratory*, 11.

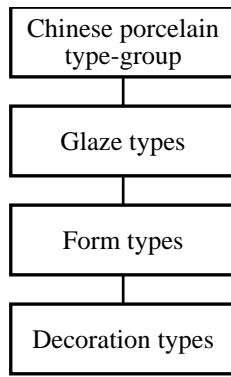


Table 2. 4 Sequence of Chinese porcelain typology.

Comparative analysis: price grading

Chinese porcelains recovered from Market Street Chinatown in California and Cangdong Village in Guangdong served as comparisons for Chinese porcelain from IKG. The former is an overseas Chinese site and the latter, the home village of Chinese migrants. These sites were chosen for their clearly defined groups of Chinese consumers in contrast to IKG's indeterminable consumers. They were also chosen for the recent research, which involves the comparison of both sites and demonstrates standardised archaeological practices through an established typological framework. This research holds significance in the field of ceramic studies in historical archaeology due to the lack of archaeological scholarship comparing nineteenth-century Chinese porcelain between multiple sites through a transnational lens. The goal of the comparative analysis in this thesis is to observe the similarities and differences in decoration types that were historically accessible to consumers from these three sites and to account for IKG's collection.

A price grading assessment was conducted to evaluate four common porcelain wares that were documented in an inventory price list. The four kinds of porcelain wares assessed were the winter green, four seasons, double happiness, and bamboo. These specific wares were selected for two main reasons. Firstly, the prominence of these wares at Chinese overseas sites, including those in various parts of the United States, reveals that they were widely available outside of China. Likewise, the majority of these wares were recovered from Cangdong Village

and IKG, enabling means of comparison. Secondly, these archaeologically prominent wares were also documented in an inventory price list found in a nineteenth century general store in California. Two distinct price grades were identified in the average values of the documented porcelain wares listed in the inventories.⁵³ Table 2.5 shows the two distinct price categories of several porcelain wares that were sold from 1871 to 1883 by the Kwong Tai Wo Company in California. This inventory price list currently provides the most viable estimate of Chinese porcelain values from the nineteenth century since no comparable documentation has been made available in Singapore.

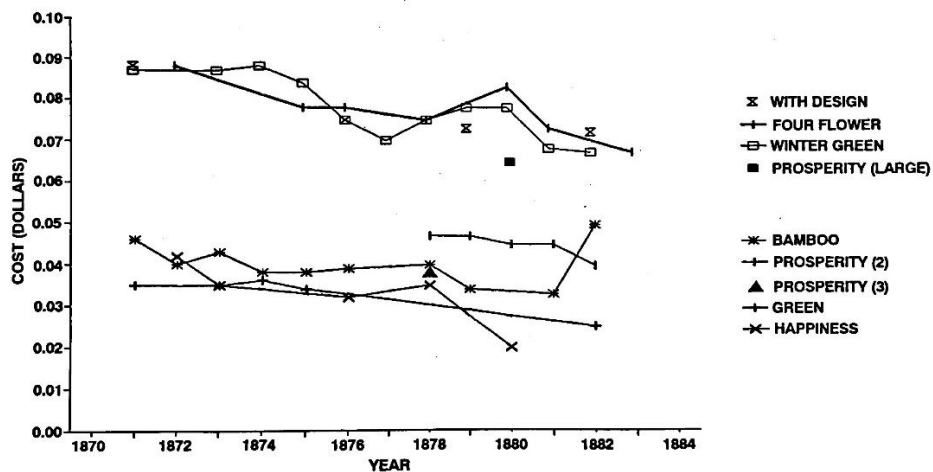


Table 2. 5 Mean prices of porcelain wares in the Kwong Tai Wo Company.

Winter green and four seasons sherds from the three sites were categorised as grade one porcelain, which was relatively more expensive than grade two porcelain consisting of bamboo and double happiness wares. The sherds of these four porcelain types were analysed separately from the rest of the sub-assemblage since the availability of an inventory price list of these wares results in easier comparisons between the specific wares.

⁵³ Ruth A. Sando and David L. Felton, "Inventory Records of Ceramics and Opium from a Nineteenth Century Chinese Store in California," in *Hidden Heritage: Historical Archaeology of the Overseas Chinese*, ed. Priscilla Wegars (New York: Baywood Publishing, 1993), 163.

Comparative analysis: presence or absence of decoration types

The absence of data is often regarded as the lack of evidence, rendering any inference proposed from a dataset invalid.⁵⁴ However, the absence of archaeological data is considered significant when data are expected to be present where evidence is significant in comparative sources.⁵⁵ The typology developed in this thesis showcases a range of decoration types, exhibiting the presence or absence of various ceramic decorations between IKG and the other sites. The goal of comparing decoration types of Chinese porcelain across the sites was to observe how the decorations from a Chinese overseas site and a hometown of Chinese migrants could differ from the culturally diverse population in IKG.

Decorations identified at IKG were grouped into glaze types. There were nine blue and white decorations with 10 categorised as unique designs. Three main polychrome decoration types were identified, with an indefinite number of decorations categorised as unique examples. The three polychrome decoration types (floral, geometric, and green glaze polychrome) had clumped no less than 46 specific decorations that were organised into the three decoration types for analytical purposes. Monochrome and white glaze wares were omitted in this comparative analysis due to limited information about their decorations.

Decoration types instead of form types were used for this analysis due to its attributes' capacity to demonstrate variety, suggesting potential consumption and production trends. Prices were often determined by decorations as exemplified by the Kwong Tai Wo inventories. A comparison of decorations can illuminate the consumers' willingness to pay a higher price for more unique ceramics. Uniqueness in this case was determined by the lower frequency of decorations measured in sherd count and the lack of comparative examples in scholarship. Likewise, the presence or absence of decorations allowed this thesis to explore ideas of

⁵⁴ Efraim Wallach, "Inference from Absence: the case of archaeology," *Palgrave Communications*, Vol. 5, No. 94 (2019): 2, accessed March 31, 2023, <https://doi.org/10.1057/s41599-019-0307-9>.

⁵⁵ Wallach, "Inference from Absence," 2.

connections with producers and the implications of merchant and consumer accessibilities to products. This comparative analysis between the three Chinese porcelain sub-assemblages aims to explore ways the similarities and differences of porcelain sherds can reveal the relative degree of consumers' access and demand for Chinese porcelain at IKG in the nineteenth and early twentieth centuries. A review of relevant literature in the next chapter presents the research gaps, potentialities, and linkages that inspired the methodology in this study.

CHAPTER THREE LITERATURE REVIEW

James Deetz defines historical archaeology as a sub-discipline concerned with the widespread dispersion of European culture and its effects on the world since the fifteenth century, or the post-Columbian era.⁵⁶ Historical archaeologists highlight that Deetz was interested in “tracing shifts in identities and circumstances, and the process of becoming American”⁵⁷ as opposed to the Eurocentric views of unidirectional influence and the passive adoption of colonial impositions. The notion of *shifting* identities underlines the amalgamation of cultures that does not exclusively transpire within the colonial experience. Such an idea encompasses the retention and appropriation of values and practices, which contrasts with views that consider events such as the transmission of ideas, colonialism, and modernisation as historical periods that radically transformed societies. Historical archaeology traces these shifting identities by employing textual resources and material culture in examining the transformation of the modern world.⁵⁸

Archaeology in the post-Columbian period is one of many possible forms of historical archaeology in considering the complex definitions of the modern world.⁵⁹ In Southeast Asia, the spread of the Indic writing system and its transformation into various regional scripts between A.D. seventh and fifteenth centuries, commonly found in inscriptions, marks the transitional period into what could be broadly considered as ‘post-classic’ and ‘modern’ periods of the post-fifteen century era in Southeast Asia.⁶⁰ Some topics of interest to historical

⁵⁶ James Deetz, *In Small Things Forgotten: The Archaeology of Everyday Life in Early America* (New York, Anchor Books, 1977), 5.

⁵⁷ Charles E. Orser Jr. et al, “Introduction,” in *The Routledge Handbook of Global Historical Archaeology* (Oxon and New York: Routledge, 2020), 2.

⁵⁸ Adam Fracchia, “A Brief History of Historical Archaeology in the Beginning of the twenty-first Century,” in *The Routledge Handbook of Global Historical Archaeology* (Oxon and New York: Routledge, 2020), 29.

⁵⁹ Fracchia, “Brief History,” 16.

⁶⁰ John N. Miksic, “Historical Archaeology in Southeast Asia,” *Historical Archaeology*, Vol. 51, No. 4 (2017): 473, accessed September 17, 2022, <https://www.jstor.org/stable/10.2307/48700119>.

archaeologists of Southeast Asia include urban development, regional and global trade, and social and environmental changes.⁶¹

Charles Orser identifies four themes that historical archaeology is primarily concerned with: “analytical scale, capitalism, vectors of inequality, and heritage and memory.”⁶² Analytical scale refers to the relationship between local and global units of archaeological analysis, highlighting possible social interactions through the linkages of material culture on different geographical scales.⁶³ The analytical topic of capitalism examines the impact of capitalist practices that impacted the lives of communities around the world.⁶⁴ Historical archaeology is concerned with inequality because of its potential to derive interpretations of identity from artefacts.⁶⁵ These interpretations are valuable for either reinforcing or complicating dominant perspectives on social positions within hierarchical societies.⁶⁶ Heritage and memory are interrelated themes concerned with social meaning embodied in landmarks and objects of significance.⁶⁷ This thesis follows a definition of historical archaeology that focuses on the study of material culture with the support of historical documentation. It also employs Orser’s thematic analysis of heritage and scale in investigating the identification and distribution of Chinese porcelain within the household unit of IKG while examining global connections through similar materials at overseas sites.

⁶¹ Miksic, “Archaeology in Southeast Asia,” 484.

⁶² Charles E. Orser Jr., “Twenty-First-Century Historical Archaeology,” *Journal of Archaeological Research* 18, No. 18 (2010): 116, accessed July 17, 2023, <https://www.jstor.org/stable/23018392>.

⁶³ Orser, “Twenty-first-century,” 116 – 117.

⁶⁴ Orser, “Twenty-first-century,” 120.

⁶⁵ Orser, “Twenty-first-century,” 125.

⁶⁶ Orser, “Twenty-first-century,” 125.

⁶⁷ Orser, “Twenty-first-century,” 132.

Archaeological research of Singapore's colonial past

Historical archaeology is at its infancy in the study of Singapore's colonial past. The sub-discipline investigates the ways archaeological material can illuminate the prosaic facets of Singaporean lives; an area of history inadequately addressed in colonial documentation. The initial challenge in the study of such artefacts lies in the process of organising and analysing large databases of archaeological material. Lim demonstrates in his thesis a section likely inspired by Deetz 1977 publication, "in small things forgotten," the potential of classifying glass shards from Fort Serapong. The collection of glass shards provided sufficient data for the development of a preliminary typology of glass vessels produced by the Singapore Glass Manufacture Company. Lim drew connections between glass bottle designs, vessel capacities, and various types of soft drinks by classifying model numbers embossed on bottles and comparing them with a catalogue published by the company.⁶⁸ Lim's preliminary typology demonstrates a series of attribute levels informed by the catalogue as opposed to one that was self-directed by his research interest. A challenge that might arise from an imposed classification system is the insufficient attention given to other attributes valuable to more complex questions. His efforts to extract data from glass shards demonstrate the potential of consolidating minute details from objects that can be categorised and established as a control group for future references. For example, he suggests that such databases offer a point of departure for the study of consumption habits, production, and chronological timelines of other archaeological sites and their artefacts, such as glass deposits from Fort Tanjong Katong.⁶⁹ However, Lim's study of glass bottles had limited historical context and no initial work that

⁶⁸ Chen Sian Lim, "Colonial Singapore: Archaeological vs. Historical Records: The Fort Serapong Case Study," (MA Thesis, National University of Singapore, 2007), 159 – 160.

⁶⁹ Lim, "Colonial Singapore," 160 – 161.

discussed why or how these glass bottles first arrived at the site. That is why historical archaeology necessitates textual sources to give material culture its context.

John Miksic claims that there is no lack of material in the study of nineteenth to early twentieth century Singapore.⁷⁰ Three archaeological projects were initiated between 1989 and 2000 with the objective of learning more about locals in Singapore during the colonial period.⁷¹ The sites include Duxton Hill (DXT), Pulau Saigon (PSG), and the site discussed in this thesis, IKG. The DXT excavation, which commenced on March 14, 1989, was aimed at examining various aspects of early urban life in Singapore. Duxton Hill underwent multiple changes with various businesses and residents residing in the neighbourhood since the 1830s.⁷² From the 1880s to early twentieth century, Duxton Hill underwent infrastructural development under the direction of the Tanjong Pagar Dock Company, and several wealthy Chinese developers who erected shophouses for various purposes.⁷³ The neighbourhood had a significant Chinese migrant population by the early twentieth century, many of whom worked as coolies. These shophouses also served as shelters for gamblers, opium smokers, prostitutes, and people who participated in vices of the like.⁷⁴

Historical records of the densely populated Duxton Hill complement the findings in the archaeological assemblage. Miksic notes that two of the four locations dug at DXT uncovered remains that include opium pots, ceramics, glass bottles, and wood pieces that were possibly part of the civil officer Dr. J. W. Montgomerie's house, which he had leased in the early nineteenth century.⁷⁵ More unique objects such as carved bone toothbrush handles and toy

⁷⁰ John N. Miksic, *Singapore and the Silk Road of the Sea 1300-1800* (Singapore: NUS Press, 2013), 431.

⁷¹ Miksic, *Singapore and the Silk Road of the Sea*, 420.

⁷² John N. Miksic, "Archaeology in the City: Digging at Duxton Hill," *Tanjong Pagar: Singapore's Cradle of Development*, (Singapore: Tanjong Pagar Citizens' Consultative Committee, 1989), 34 – 36.

⁷³ Miksic, "Archaeology in the City," 35.

⁷⁴ Miksic, "Archaeology in the City," 36.

⁷⁵ Miksic, "Archaeology in the City," 38 – 40.

stone marbles were also found, suggesting the site's proximity to a residential area.⁷⁶ The wide range of artefacts and support from documentation of building ownership and activities present an opportunity for the study of the Duxton Hill community in early urban Singapore. At the time of the drafting of this thesis, the DXT assemblage remains underexploited for research as it continues to undergo post-excavation procedures of data collection and labelling.

A challenge that the DXT assemblage poses is its relatively small sub-assemblages of each material compared to other nineteenth-century sites in Singapore. A site-specific study of Chinese porcelain may not provide an adequate sample size required for the development of a typology representative of the entire site. Chinese porcelain sherds recovered from DXT were few and almost limited to blue and white glazed wares. Other common glaze types, such as polychrome wares found at IKG, were not recovered from DXT, which reiterates the point that the site might not have been excavated to a thorough degree. This challenge is complicated by the contingent nature of the project that determined excavated locations based on the limited number of undisturbed areas rather than "more sophisticated or historical considerations" that would provide a more holistic assessment of the Duxton Hill and Tanjong Pagar neighbourhood.⁷⁷ As such, the DXT assemblage necessitates a wider use of historical sources and a reliance on other sites and their typologies to contextualise the similarities and differences of materials in smaller quantities.

The PSG assemblage represents a larger and more focused range of materials than DXT. The majority of the artefacts recovered from the site were European, Japanese, and Chinese ceramic sherds though metal, glass, and numerous organic materials were also retrieved from

⁷⁶ Miksic, "Archaeology in the City," 39 – 40.

⁷⁷ Miksic, "Archaeology in the City," 33.

the site.⁷⁸ The development of a typology for PSG faces similar challenges as compared to DXT especially when one is attempting to capture the range of materials historically available at the site. There are two main factors for the limitations: the absence of a systematic excavation and the short timespan given to the PSG project between November 1988 and March 1989, which ran concurrently with the initial phase of the construction of the Central Expressway tunnel that partially replaced the small island.⁷⁹ The time constraint resulted in the recovery of objects from concentrated spots of artefacts, which potentially neglected other areas of artefacts. Priority given to selective materials over strategic plotting could have also affected the accuracy of the site's possible material proportions. Stratigraphic excavation was not possible with this project since PSG had little to no natural soil formation, with most its grounds disturbed by human activities such as sporadic dumping of trash and the movement of cargo from water to land.⁸⁰

Nonetheless, Barry claims in *Pulau Saigon* that artefacts recovered from PSG were extensive concentrations of certain types of material that implies an accumulation of bulk disposals.⁸¹ She attributes this observation to some possible explanations such as the town refuse that travelled downstream from a dumping ground near Pearl's Hill before 1889 and the buildup of non-flammable deposits from experimental incineration conducted on Pulau Saigon in 1889.⁸² Another explanation includes the discarding of breakages from the warehouses that operated on Pulau Saigon that possibly stored ceramics with popular designs.⁸³ These untested

⁷⁸ Geok Yian Goh and John N. Miksic, "Statistics of the PSG Artifacts," The NUS Press Singapore, accessed March 15, 2023, <https://epress.nus.edu.sg/sitereports/pulauseaigon/text/statistics/>. Refer to the site report for the tree diagram which illustrates the significance of ceramics among other findings collected during the Pulau Saigon project.

⁷⁹ Jennifer Barry, *Pulau Saigon: A post-eighteenth century archaeological assemblage recovered from a former island in the Singapore River* (Stamford, UK: The Rheidol Press, 2000), 14.

⁸⁰ Geok Yian Goh and John N. Miksic, "Site Formation Processes and Artifact Distribution," The NUS Press Singapore, accessed July 23, 2023, <https://epress.nus.edu.sg/sitereports/pulauseaigon/text/statistics/>.

⁸¹ Barry, *Pulau Saigon*, 19.

⁸² Barry, *Pulau Saigon*, 18 – 20.

⁸³ Barry, *Pulau Saigon*, 19.

hypotheses exemplify the issues of using salvaged deposits as data points for the study of consumer patterns in areas of proximity in the nineteenth and twentieth centuries.

Barry also developed a preliminary typology of the Chinese porcelain sub-ensemble based on an identification system which is dependent on similar design elements and physical properties used to distinguish the vessels' provenance and manufacturing processes.⁸⁴ This methodology shows particular importance in the analysis of Chinese porcelain where a rudimentary grading system was applied to categorise vessels into different groups of manufacture.⁸⁵ Three graded groups and two subgroups separate the fine paste hand painted vessels, from the coarser block printed and hand painted wares, and the coarsest wares with inclusions that resemble sand adhesions in stoneware.⁸⁶ Perceivable properties that can be seen and touched represent the main attributes that this system relies on to determine the porcelain vessels' respective qualities. It is common for archaeologists to use sight as the foremost descriptive tool in the analysis of archaeological material.⁸⁷ However, information that is solely visible risks limiting the knowledge of the past.⁸⁸ An alternative grading system that engages with historical sources adds a contextual dimension to the study of these Chinese porcelain sherds. This thesis aims to include a price grading system that uses historical records to enrich the historical significance of certain types of Chinese porcelain vessels in the IKG sub-ensemble.

Barry's investigation of European ceramics in *Istana Kampong Glam* demonstrates the importance of cross-referencing visual elements with historical records, a methodology that could have inspired Lim's use of the manufacturer's catalogue. Maker's marks at the bottom

⁸⁴ Barry, *Pulau Saigon*, 24 – 29.

⁸⁵ Barry, *Pulau Saigon*, 26.

⁸⁶ Barry, *Pulau Saigon*, 26.

⁸⁷ Catherine Frieman and Mark Gillings, "Seeing is Perceiving," *World Archaeology*, Vol. 39, No. 1, *Viewing Space* (2007): 8, accessed March 23, 2023, <https://www.jstor.org/stable/40026479>.

⁸⁸ Frieman and Gillings, "Seeing is Perceiving," 8.

of base sherds enable the dating of European vessels with the support from records that indicate the mark's period of use and change.⁸⁹ Maker's marks also can be used to identify the vessels' provenance and date accompanying designs. These reference points give context to IKG's archaeological data through the study of a manufacturer's niche and the tracking of the persistence of market patterns. For example, Barry shows that production records and scholarship provide sufficient information for the confirmation of a Southeast Asian export collection marketed by the Scottish manufacturer, J.&M.P. Bell.⁹⁰ She identifies this collection through localised decorative elements such as "local fruits, flowers, birds, mythological creatures and symbols"⁹¹ that were also given Malay names in the manufacturer's registry. This analysis, facilitated by the availability of product documentation, is useful for the study of local consumption habits and the production patterns of ceramics.

Sim expands on Barry's analysis in her master's thesis by examining the extent of ceramic trade between Singapore and Europe during the colonial period.⁹² Her typology of the European porcelain sub-ensemble from IKG reveals three distinct types of body fabric and manufacturers from no fewer than six European countries.⁹³ Other attributes she considered in her classifications were the decorative techniques and patterns, vessel forms, and an overseas price list to help gauge the vessels' historical value.⁹⁴

These abovementioned works reiterate the research potential of consolidated archaeological data of assemblages from DXT, PSG, and IKG. Materials from these sites present unique sources of information for historical archaeologists to investigate Singapore's

⁸⁹ Barry, *Istana Kampong Glam: Archaeological excavations at a nineteenth century Malay Palace in Singapore* (Stamford, UK: The Rheidol Press, 2007), 24 – 25.

⁹⁰ Barry, *Istana Kampong Glam*, 35.

⁹¹ Barry, *Istana Kampong Glam*, 35.

⁹² Sxuann Sim, "Pottery of the colonial world: the study of European porcelain in Istana Kampong Gelam, Singapore (IKG)," (MA Thesis, Nanyang Technological University, 2022), 85.

⁹³ Sim, "Pottery of the Colonial World," 85.

⁹⁴ Sim, "Pottery of the Colonial World," 86.

colonial past. These respective assemblages should not be deemed as monolithic units of analysis representative of a large group of people. For instance, the DXT ceramic sub-assemblage, though recovered from a neighbourhood largely populated by Chinese, is not representative of what Chinese elsewhere in Singapore would have consumed in the nineteenth century. Historical archaeology demands that archaeological assemblages be contextualised within the social environment of the historical site through the support of textual sources and categorised materials. The organised documentation of material culture enables a further study of analytical scale, where artefacts recovered in Singapore can also be compared to similar artefacts globally.

This thesis presents such an opportunity by comparing the similarities and differences between Chinese porcelain from IKG, Market Street Chinatown, and Cangdong Village to demonstrate the widespread and also contrasting availability of specific wares across different overseas sites. Similar porcelain between sites reveals shared information within the ceramic industry. This information includes the means of communication with the same porcelain manufacturers and the types of decoration that were popular or potentially demanded in the overseas market. Likewise, the degree of shared information indicates the scale of networks that supported the logistics and distribution of these porcelain wares. The differences in porcelain wares across the sites indicate varying levels of exclusivity resulting from factors of accessibility, including logistical, geographical, and networking reasons, as well as the presence of demand.

Archaeology of a nineteenth century household

The Istana building at Kampong Gelam underwent multiple transitory states between the early nineteenth and mid-twentieth centuries. Its relationship with the Kampong Gelam

neighbourhood was one marked by dynamism and intermingling since its compound was at the core of a centralised and diverse urban centre. The IKG site represents a compound that was both a domestic and communal space. Both descriptions of the domestic and communal spaces are important in recognising that IKG was a household for Malay royalty while its compound was also accessible by visitors and residents living in the vicinity. This means that artefacts recovered from IKG were contributed by either the residents of IKG, its visitors, or a combination of both groups of people. Archaeologists recognise that the study of ceramics at specific sites can reveal more about a space and its activities. Ceramics are everyday objects that can potentially reveal the choices of its consumers or even leave traces of social and economic circumstances, which the inhabitants of the household unit experienced. The archaeological studies conducted at the barangay of Pinagbayanan in the Philippines are examples.

Kristyn Maguire analysed ceramics from a nineteenth-century household in Pinagbayanan, known as 'Structure A,' to investigate the site's period of occupancy. This was accomplished by classifying sherds based on their spatial distributions and historical periods.⁹⁵ Structure A is located within an old town that was built as a 'plaza complex' in the nineteenth century, which follows the Laws of the Indies issued by the Spanish monarch in 1573.⁹⁶ The plaza was the focal point of important social, political, and religious events, engineered in a way that resulted in residents living further from the centre possessing lower social positions.⁹⁷ Colonial towns in the Philippines followed such layouts,⁹⁸ which reinforced the importance of the existing authority within the distinct social space.

⁹⁵ Kristyn Maguire, "Analysis of the ceramic assemblage recovered during the excavation of a 19th century household in Pinagbayanan, San Juan, Batangas, the Philippines," ARCH 207, n.d., 7.

⁹⁶ Grace Barretto-Teso, "The Application of the Laws of the Indies in the Pacific: the Excavation of Two Old Stone-Based Houses in San Juan, Batangas, Philippines," *International Journal of Historical Archaeology*, Vol. 19, No. 3 (2015): 433 – 434, accessed April 10, 2023, <http://www.jstor.org/stable/24572799>.

⁹⁷ Barretto, "Laws of the Indies," 434.

⁹⁸ Barretto, "Laws of the Indies," 434.

The Istana at Kampong Gelam shares similarities with Structure A, though the case study in Pinagbayanan does not involve royalty. The buildings surrounding IKG include the likes of the Gedung Kuning and the Sultan Mosque. The former was originally built for the grandson of Sultan Hussein and the latter, a mosque strategically established by Hussein, whose followers frequently visited for worship and shelter.⁹⁹ Structure A and IKG both demonstrate inclination of elites within respective communities to live in close proximity to religious establishments and other people of influence. While this provides context for Structure A, the same cannot be said about the inhabitants of IKG whose royal status dwindled towards the end of the nineteenth century.

Maguire notes that Chinese porcelain sherds recovered from Structure A were non-imperial vessels from the middle (1796 – 1875) and late (1876 – 1912) Qing periods.¹⁰⁰ Decoration and technique were considerations in her dating methodology.¹⁰¹ Recurring decorations were dated with the assistance from staffs at the National Museum of the Philippines. The classification of these porcelain sherds, in conjunction with the illustrated stratigraphy of the excavated trenches, enabled the archaeological layers to be assigned relative periods. This technique of dating applies the law of superimposition, which postulates the lowest soil layer excavated to be the oldest, with each layer above it younger than the previous layer. This principle is frequently applied alongside the concept of *terminus post quem*, which further explains that each stratigraphic layer is dated to the period after the manufacture date of objects excavated from that layer. As such, the deepest soil layer directly above the first mortar foundation of the house – which marked the first occupancy – was dated according to the late Qing sherds recovered despite identifying a substantial quantity of middle Qing sherds

⁹⁹ Geok Boi Lee, *The Religious Monuments of Singapore: faiths of our forefathers* (Singapore: National Heritage Board, 2002), 94.

¹⁰⁰ Maguire, “Analysis of the ceramic assemblage,” 29.

¹⁰¹ Maguire, “Analysis of the ceramic assemblage,” 30 – 34.

in the same layer.¹⁰² Likewise, the soil layer above a second mortar floor was attributed to the late Qing period despite the recovery of middle Qing sherds.¹⁰³ The multiple layers of mortar followed by soil also indicates the possibility of multiple occupancies.¹⁰⁴

Maguire's analysis suggests unexpected results as historical records and communication with present-day residents in the area specify that the town was relocated to Calit Calit in 1892 due to a flood that occurred in 1886.¹⁰⁵ She concludes that the construction of Structure A could be tentatively dated to a period after 1876 while no distinctions could be made about the different periods of occupancy.¹⁰⁶

Stratigraphic dating poses a greater challenge in the study of Chinese porcelain from the IKG site as compared to Structure A in Pinagbayanan. The initial complication in using this method lies in the absence of clear stratigraphic layers at the IKG site. Instead, spits (a consistent arbitrary measurement in depth) were used to delineate the depth of excavated squares and do not provide information for artefact dating. Some of the excavated squares at IKG were also found to be mixed deposits with materials from a relatively wide timeframe. For example, some artefacts believed to have been produced in the early nineteenth century were found near the surface of certain squares while more recent objects were found deeper in the pit.¹⁰⁷ Hence, the use of stratigraphic dating at IKG to gain a better understanding about the activities at the site is not possible. Instead, this thesis focuses on the Chinese porcelain recovered from IKG to learn what wares were accessible to its consumers at the site.

Andrea Kintanar conducted another study of Structure A at Pinagbayanan that examines the way Chinese porcelain vessels recovered from the site were used through an analysis of

¹⁰² Maguire, "Analysis of the ceramic assemblage," 47.

¹⁰³ Maguire, "Analysis of the ceramic assemblage," 47.

¹⁰⁴ Maguire, "Analysis of the ceramic assemblage," 47.

¹⁰⁵ Maguire, "Analysis of the ceramic assemblage," 47.

¹⁰⁶ Maguire, "Analysis of the ceramic assemblage," 60.

¹⁰⁷ Barry, *Istana Kampong Glam*, 133.

scratches and abrasions on the sherds' surfaces. Initially, she differentiated between new and old scratch marks differentiating between recent archaeological handling and those created by the inhabitants of Structure A. Longer scratches with soil deposits embedded in the cuts were identified as old marks, in contrast to more recent marks that lacked discoloration or hardened sediments.¹⁰⁸ Kintanar applies Dorothy Griffiths' method of identifying utensil marks on ceramics by associating straighter, lengthier, and deeper incisions with the knife and lighter and more sporadic curved lines – that also appear at the side of vessels – with the spoon and fork.¹⁰⁹ The goal of this analysis was to determine if vessels were utilitarian wares or decorative household objects, and if they were utilitarian wares, whether they were used as serving vessels shared by multiple people at a time.¹¹⁰ Abrasion marks and discolouration on the foot rim were also deemed as signs of frequent use for dining.¹¹¹ However, this association between abrasion marks, discolouration, and the foot rim might be ineffective since collectors and scholars have shown that coarser and orange-edged foot rims are common to nineteenth-century Chinese blue and white porcelain vessels.¹¹² This technique of analysis is also problematic as one could mistake adhesive particles stuck to an unglazed foot rim – which can appear rougher than a glazed surface – as marks of abrasion.

The scratch assessment is not as illuminating to the study of Chinese porcelain vessel functions at IKG due to the diverse population that lived in the neighbourhood. For instance, a

¹⁰⁸ Andrea N. E. Kintanar, "Of Scrapes and Scratches: A Preliminary Study on the Use-wear of Porcelain Sherds from Structure A, Pinagbayanan, San Juan, Batangas, Philippines." *Hukay*, vol. 19 (2014), 69. This analysis was conducted under a portable microscope with a '50 – 60x' magnification.

¹⁰⁹ Kintanar, "Of Scrapes and Scratches," 71.

¹¹⁰ Kintanar, "Of Scrapes and Scratches," 74.

¹¹¹ Kintanar, "Of Scrapes and Scratches," 74.

¹¹² Anthony John Allen, *Allen's Authentication of Later Chinese Porcelain (1796AD – 1999AD)* (Allen's Enterprises Ltd: Auckland, 2000), 46 – 47 and 79 – 80. Anthony Allen observes that the "iron orange" tint of foot rims – that Kintanar possibly identified as "discolourations" – are common among nineteenth century blue and white wares and attributes this appearance to possible impurities and the deterioration in porcelain quality in that period. Barry, *Pulau Saigon*, 26. Jennifer Barry also recognises the abrasive appearances of Chinese porcelain. Though she does not explicitly mention the foot rim, her photographs illustrate abrasive foot rims like those presented by Kintanar.

vessel discovered to have been paired with a knife does not confirm that the majority of inhabitants at Kampong Gelam commonly used knives with that type of porcelain ware. Alternatively, other diagnostic attributes such as porcelain decorations and sizes may provide more valuable insight into the lives of undocumented people. Such attributes may suggest a certain consumption habit or a particular inclination for an activity. Surmising the distribution of these attributes can reveal recurring patterns which may be indicative of larger trends. Likewise, porcelain attributes provide archaeological data collected from a household unit with opportunities for transnational comparisons.

Disparity in Chinese porcelain catalogues

Catalogues are useful in gauging institutional interest in the study of ceramics and providing researchers with a guide for porcelain identification, history, and function. Public institutions and private collectors tend to showcase their highly prized collections in Chinese porcelain catalogues, underlining the vessels' association with imperial grade products and manufacture. For instance, museums exhibiting collections from the Qing Period commonly present commissioned polychrome enamel, monochrome, and chinoiserie porcelain. These were valuable objects in the Imperial Court and widely desired by Western elites. Mass produced Chinese porcelain vessels do not receive equal attention. Three main reasons explain this disparity. Firstly, non-imperial kiln sites, which are mostly provincial kiln sites, have no known documentation of their inventories and manufacturing process. The imperial court on the other hand established a practice of cataloguing ceramics and other commissioned art objects since the Song Dynasty in a systematic fashion to legitimise authentication and prestige.¹¹³ Likewise, Qing emperors dedicated resources to producing documentation of their

¹¹³ Ellen C. Huang, "From the Imperial Court to the International Art Market: Jingdezhen Porcelain Production as Global Visual Culture," Vol. 23, No. 1, *Journal of the World* (2012), 121, accessed November 18, 2021, <https://www.jstor.org/stable/41508053>.

art collections.¹¹⁴ An example of an imperial kiln documentation is the *Taoye tushuo* (1743), an album of illustrations and commentaries about the Jingdezhen porcelain manufacturing process commissioned by the Qianlong emperor.¹¹⁵ Historical documentation used for imperial porcelain studies are in abundance and preserved as national treasures. It should be explained at this point that “imperial” porcelain does not mean that porcelain wares produced in the imperial kilns were product-specific, though imperial wares often possess reign marks that authenticate the porcelain as a court commissioned ware. Secondly, non-imperial porcelain vessels are ubiquitous at nineteenth and twentieth-century archaeological sites with a significant presence of Chinese artefacts. These archaeological materials often feature coarser bodies, irregularities in surface treatment, and decorations typically looser than those on court wares. These materials often occur as fragments and not complete vessels at excavated sites, which can be more challenging to process and document. Thirdly, mass-produced porcelain vessels do not hold the same monetary value as imperial products within the realm of antiquity. This disparity arises from considerations of authenticity that emphasises the exclusivity of porcelain pieces associated with the imperial court. Additional factors include the quality control applied to court-commissioned porcelain, resulting in more consistent forms, glazing, decorations, and firing. Mass produced porcelain from the nineteenth and twentieth centuries are rarely documented in catalogues and disdained as lesser objects of value.

William Willetts’ *Nonya Ware and Kitchen Ch’ing* catalogue published in 1981 remains an influential documentation of mass-produced Chinese porcelain.¹¹⁶ Willetts in his introduction terms such wares as ‘Kitchen Ch’ing’ (or Qing) as to recognise their prevalence in the kitchen of a Chinese Malaysian and Singaporean household in the nineteenth and

¹¹⁴ Huang, “From the Imperial Court,” 120 – 121.

¹¹⁵ Huang, “From the Imperial Court,” 127.

¹¹⁶ William Willetts played a pivotal role as the founding member of the Southeast Asian Ceramic Society. His early endeavours to advance the study of less well-known Chinese porcelain discovered in Southeast Asia were pivotal in generating the initial enthusiasm for the field.

twentieth centuries.¹¹⁷ This association between Chinese crockery and the kitchen is captured in an anecdotal recollection by an interviewee, Ms. Lim, whose memories of home visitations involved the inspection of one's kitchen as it was “the focal point of the Chinese household”¹¹⁸ (she was referring to families in the 1920s). Anecdotal accounts like such offer a glimpse of experiences and the meanings of commonplace Chinese porcelain individuals hold as valuable memories. Willetts notes that kitchen qing wares were intertwined with the domestic setting and service of many Chinese families.¹¹⁹ However, he also highlights that this generalisation risks labelling these wares as export goods targeted at the overseas Chinese market though certain designs – such as the ‘sino-Islamic’ plates and nonya wares – were initially customised for specialised markets.¹²⁰

Willetts' catalogue, which primarily focuses on examples of Chinese porcelain kitchenware found in Singapore and Malaysia, has been cited by more recent scholars in the West. Some of these scholars, including several North American archaeologists mentioned later in this literature review – Priscilla Wegars, Philip Choy, and Barbara Voss – have drawn upon his work. The prevalence of its citation in current scholarship serves as a testament to the insufficient updates of catalogues documenting nineteenth and twentieth-century everyday Chinese porcelain. A typology of Chinese porcelain from IKG in this period presents an expansion of existing archaeological findings, which contributes to a broader discussion of porcelain wares recovered from a single historical site.

¹¹⁷ William Willetts, “Introduction,” in *Nonya Ware and Kitchen Ch'ing: Ceremonial and domestic pottery of the 19th – 20th centuries commonly found in Malaysia*, ed. William Willetts and Lim Suan Poh (Selangor: The Southeast Asian Ceramic Society, 1981), 2.

¹¹⁸ Willetts, “Introduction,” 2.

¹¹⁹ Willetts, “Introduction,” 2.

¹²⁰ Willetts, “Introduction,” 2.

Chinese porcelain and trade in Singapore

Trade and merchant records offer insights into porcelain pricing, commercial trends, and the provenance of archaeological material from the nineteenth and twentieth centuries. Unfortunately, details about Chinese merchants and their goods in Singapore are limited. The Singapore Chinaware Merchants Association expressed similar sentiments in 1970 when they wrote in their 19th anniversary's commemorative publication that information about the ceramics industry in Singapore was almost absent and that its history could be traced “back to more than a century ago”.¹²¹

Jason Lim's investigation of Chinese merchants in Singapore examines the political and economic climate between 1819 and 1959 to address this gap in merchant records. His compilation and analysis of import and export numbers from the *Tabular Statements of the Commerce and Shipping of Prince of Wales Island, Singapore and Malacca* and the *Straits Settlement Blue Book* from the years 1845 to 1856 (information from 1851 and 1854 is unavailable) and 1870 to 1889 (information from 1879 and 1884 to 1887 is unavailable) confirm that ceramics were heavily exported from China to Singapore in the nineteenth century.¹²² Overseas Chinese merchants managed China exports during this period as their businesses were logistically supported by family networks in southern China and driven by consumers who transacted business in dialect.¹²³ Chinese porcelain identifiable in any of the three categories in the compiled export records – “crockery,” “porcelain and earthenware,” and “chinaware” – consistently appeared in the list of top five commodities exported from China

¹²¹ *Singapore Chinaware Merchants Association, Commemorative Souvenir: 19th Anniversary and Official Opening of New Premises* (Singapore: Singapore Chinaware Merchants Association, 1970), foreword, quoted in Jason Lim, “Chinese Merchants in Singapore and the China Trade, 1819-1959,” *Chinese Southern Diaspora Studies*, Vol. 5, (2011-12): 81.

¹²² Lim, “Chinese Merchants in Singapore,” 88 – 91.

¹²³ Lim, “Chinese Merchants in Singapore,” 83.

to Singapore from 1845 to 1856 and 1870 to 1871.¹²⁴ It is important to recognise that porcelain disappeared from the list of the top five commodities exported from China to Singapore from 1872. However, Chinese porcelain remained a significant commodity in the local market as the twentieth century approached.

Lim suggests that two occasions galvanised overseas Chinese support for Chinese commercial activities in Singapore in the first quarter of the twentieth century.¹²⁵ The first was the establishment of the Singapore Chinese Chamber of Commerce in 1906, which was initiated by the Chinese Imperial Commissioner to help Chinese businesses thrive in Singapore.¹²⁶ The second was the 1911 Republican Revolution that provided a nationalistic impetus for overseas Chinese merchants to excel and contribute to industrialisation efforts in China.¹²⁷ During this period, Chinese merchants in Singapore were encouraged by the Chamber to increase the frequency of advertising Chinese products in souvenir publications.¹²⁸ The Chamber, with order from the Republic, implemented procedural inspections to verify that China-made products possessed trademark to distinguish them from other foreign products.¹²⁹ China continued to be the foremost exporter of crockery and porcelain goods into British Malaya in 1912 despite increasing competition from other ceramic industries in countries that manufactured similar products such British white earthenware and Japanese blue and white porcelain.¹³⁰ However, Lim only examines the forces that possibly drove the importation of Chinese products into Singapore without discussing the influenced these factors had on the Chinese in Singapore.

¹²⁴ Lim, "Chinese Merchants in Singapore," 88 – 89.

¹²⁵ Lim, "Chinese Merchants in Singapore," 92.

¹²⁶ Lim, "Chinese Merchants in Singapore," 92.

¹²⁷ Lim, "Chinese Merchants in Singapore," 93.

¹²⁸ Lim, "Chinese Merchants in Singapore," 93.

¹²⁹ Lim, "Chinese Merchants in Singapore," 93.

¹³⁰ *British Malaya: trade and commerce* (London: Malay States Information Agency, 1912), 22, NL9819, microfilm edition, Repository Used Book Collection, National Library Board, Singapore.

The period during the nineteenth century when Chinese porcelain was among the top five commodities imported into Singapore corresponds with the dates assigned to Chinese porcelain recovered from archaeological sites in New Zealand, Australia, the Philippines, and the United States.¹³¹ Scholars attribute this historical influx of Chinese trade and migration to the mid-nineteenth century Opium Wars and Taiping Rebellion that initiated a mass exodus of Chinese from China's coastal provinces to places in Southeast Asia and elsewhere in the world for improved economic prospects.¹³² This thesis recognises the impact Chinese merchants had on Singapore's Chinese porcelain market but in so doing exercises caution in associating archaeological presence with a particular ethnic group or consumer preference. This is particularly important for Chinese ceramic studies in Southeast Asia where the ubiquity of such materials signals centuries of communication between China and Southeast Asia.¹³³

Access to Chinese porcelain by many cultures in premodern Southeast Asia resulted in "localised" functions of these wares, where different cultural groups had distinct ways of using Chinese ceramics.¹³⁴ For example, cultures in cosmopolitan seaports such as Singapore and Kota Cina primarily consumed Chinese porcelain as commonplace wares while those in Riau and Sarawak used them ceremoniously for rituals such as burial offerings.¹³⁵ Similarly, fourteen-century archaeological sites in Singapore (Fort Canning, Parliament House Complex, and Empress Place) demonstrate that separate social groups used Chinese porcelain in non-ceremonial settings, though the distribution of specific designs suggests preferences for certain

¹³¹ Patricia Hagen Jones, "A Comparative Study of Mid-nineteenth Century Chinese Blue-and-white Export Ceramics from the *Frolic* Shipwreck, Mendocino County, California," (MA Thesis, San Jose State University, 1992), 55 – 66.

¹³² Guan Hock Lim, "Chinatown: Cradle of Chinese Community Development," in *A General History of the Chinese in Singapore*, ed. Kwa Chong Guan and Kua Bak Lim (Singapore: World Scientific, 2019), 83.

¹³³ John N. Miksic, "Chinese Ceramics and Local Cultural Statements in Fourteenth-century Southeast Asia," in *Studies in Southeast Asian Art: Essays in Honor of Stanley J. O'Connor*, edited by Nora A. Taylor (New York: Cornell University Press, 2000), 194.

¹³⁴ Miksic, "Local Cultural Statements," 195.

¹³⁵ Miksic, "Local Cultural Statements," 195.

types of wares.¹³⁶ Likewise, consumption of Chinese porcelain in the nineteenth and twentieth centuries would have been culturally multifaceted and challenging to trace within the diverse population of Kampong Gelam. However, strong evidence of trade established by Chinese kinship in the nineteenth century indicates that Chinese in Singapore were closely involved in the import of porcelain from China into the island.

Lim's study shows that Chinese businesses in the nineteenth century were part of an ecosystem, whereby Chinese merchants in Singapore maintained strong networks in China to meet the demands of overseas Chinese. This information suggests that Chinese porcelains were certainly used and imported by the Chinese in Singapore. However, this statement does not presume that the ethnic Chinese were the sole distributors and consumers of Chinese porcelain wares in Kampong Gelam but stipulates that the Chinese were leading actors in the Chinese porcelain industry in Singapore. These general trade records enable us to compare overseas archaeological sites with IKG based on similar periods of trade and historical activities.

Chinese porcelain and overseas Chinese archaeology

Overseas Chinese archaeology is a subfield in historical archaeology that aims to understand how localised cultural practices shaped migrant Chinese communities and in so doing, acknowledges ethnicity as a historically contingent concept.¹³⁷ Barbara Voss, a proponent of this subfield, stresses that the empirical foundation of such a study necessitates the development of archaeological typologies since material culture is the primary source of

¹³⁶ Miksic, "Local Cultural Statements," 210 – 216. Green wares with moulded double-fish designs were relatively common at Empress Place compared to Parliament House Complex and absent at Fort Canning, suggesting that this design was more popular among the common people.

¹³⁷ Barbara L. Voss and Rebecca Allen, "Overseas Chinese Archaeology: Historical Foundations, Current Reflections, and New Directions," *Historical Archaeology*, Vol. 42, No. 3 (2008): 5, accessed April 18, 2023, <https://www.jstor.org/stable/25617508>.

historical archaeology.¹³⁸ Overseas Chinese archaeology has led to several studies on Chinese porcelain classifications with a majority of them focused on overseas Chinese sites in the United States.

Roberta Greenwood's Chinese ceramic typology published in *Down by the Station* is a foundational text for nineteenth century Chinese ceramics in the United States. It centred on the descriptive analysis of sherds recovered from the Los Angeles Chinatown. The methodology she employs involves both quantitative and qualitative assessments of forms achieved by directly measuring vessel features and identifying corresponding designs through the examination of porcelain descriptions from archaeologists in the United States and Willetts. Discussions of vessel forms and designs, including provenance, estimated production period, and general function based on records, complement the historical context of ceramics and their significance in the history of Los Angeles Chinatown. Her descriptions discuss illustrated designs of vessels that were deemed "major porcelain types"¹³⁹ and link them to references in comparable works that documented similar porcelains. The four major porcelain wares are: bamboo, double happiness, four seasons, and celadon.¹⁴⁰

Philip Choy's study of overseas Chinese ceramics similarly highlights the same four designs to "represent the majority of Chinese-produced tablewares found at historic sites in North America."¹⁴¹ However, Choy uses the term "winter green" instead of "celadon" explaining that the term is a misnomer some archaeologists used to label green glazed wares similar to green monochrome (celadon) wares that were produced in the Longquan County of

¹³⁸ Barbara L. Voss, "The Archaeology of Overseas Chinese Communities," *World Archaeology*, Vol. 37, No. 3, (2005): 425, accessed December 27, 2022, <https://www.jstor.org/stable/40024245>.

¹³⁹ Roberta S. Greenwood, *Down by the Station: Los Angeles Chinatown 1880 – 1993* (California: The Cotsen Institute of Archaeology Press, 1996), 70

¹⁴⁰ Greenwood, *Down by the Station*, 70.

¹⁴¹ Philip P. Choy, "Interpreting "Overseas Chinese" Ceramics Found on Historical Archaeology Sites: Manufacture, Marks, Classification, and Social Use," *Society for Historical Archaeology Research Resources* (2014): 2, accessed November 11, 2022, <http://www.sha.org/index.php/view/page/chineseCeramics>.

the Zhejiang Province during the Song period.¹⁴² A seemingly technical term like “celadon” contributes nothing to the typology of Chinese porcelain from IKG as the jargon has no defined consensus among scholars, as further discussed in the typology chapter. Choy’s descriptive typology of Chinese porcelains differ from Greenwood’s more technical descriptions. His approach focuses on the combination of personal experiences and research, such as the observation of his personal collection, visits to production locations in Southern China, and interviews with experts in China.

Greenwood and Choy provide a concise overview of Chinese porcelain available at overseas Chinese sites in the United States. Their typologies depend on descriptive remarks and can only offer generalisations of decoration and form types within the confines of their assemblages and geographies. This is not to say that these typologies did not achieve their purposes of organising their respective ceramic sub-assemblages into identifiable and manageable units of analysis. This thesis aims to expand beyond the specificity of location to identify transnational linkages between Chinese porcelains from IKG and Market Street Chinatown, California.

Hidden Heritage edited by Priscilla Wegars is a compilation of essays that unpacks the various facets of overseas Chinese archaeology in the States. Essays about Chinese porcelain presented in this publication may be instrumental for the understanding of similar materials recovered at IKG. One such essay by Ruth Sando and David Felton analyses a set of rare nineteenth-century ceramic inventory records from the Kwong Tai Wo Company in California.¹⁴³ These Chinese-language inventory records are particularly important as Chinese documentation of nineteenth-century ceramics is limited. These inventory prices were also

¹⁴² Choy, “Interpreting “Overseas Chinese” Ceramics, 6.

¹⁴³ Ruth A. Sando and David L. Felton, “Inventory Records of Ceramics and Opium from a Nineteenth Century Chinese Store in California,” in *Hidden Heritage: Historical Archaeology of the Overseas Chinese*, ed. Priscilla Wegars (New York: Baywood Publishing, 1993), 151.

listed with Chinese consumers in mind, which reduces the likelihood of unnecessary inflation since ceramic goods from China were common commodities to Chinese migrants and primarily sold within a close-knit community.¹⁴⁴

Translations of these ceramic inventory records reveal multiple decorative designs and forms identifiable in assemblages from archaeological sites across western United States.¹⁴⁵ One such example is the entry 冬青 (*dong qing*), which is translated to “winter green”; a more accurate term used to replace celadon. This term used in the inventory suggests that nineteenth-century merchants and consumers identified the specific type of green-glazed ware as *dong ding* or winter green. These translations provide more historically accurate naming conventions of designs and encourage descriptive standardisation across Chinese porcelain scholarship. However, adopting ceramic names from the United States for porcelain at IKG also introduces the issues of assuming these terms were also used in Singapore. Hence, terms introduced to this thesis are approached cautiously, seeking out local vernacular before referencing scholarship from United States.

A significant number of decorative designs listed in the records also correspond to Chinese porcelain vessels present in the IKG sub-assemblage, providing this thesis with valuable data for the classification of porcelain price grades. Such a grading system allows the comparison of economic value between four major porcelain wares recovered from the United

¹⁴⁴ While there are no records for comparative prices between ceramics sold to an overseas Chinese and non-Chinese market, historical documentation studied in the Market Street Chinatown Project demonstrates that the overseas Chinese in San Jose, California, constituted a close-knit community. Likewise, Chinese in nineteenth-century Singapore established reputable ties with their hometown, which eased communication with their China counterparts in facilitating Chinese imports into Singapore. These characteristics of kinship within overseas Chinese communities indicates the possibility that China goods were primarily targeted at overseas Chinese, which were unlikely to see drastic prices. This inference is important for the comparison of price grades between Chinese porcelain from Market Street Chinatown and IKG.

¹⁴⁵ Sando and Felton, “Inventory Records of Ceramics,” 157.

States. The comparison also highlights the similarities and differences between porcelain wares from the sites in question.

The Market Street Chinatown site in San Jose, California, is one of such sites for comparison that consisted of a large overseas Chinese population. Market Street Chinatown differs from the Kampong Gelam neighbourhood, which had diverse cultural communities residing in the area as described in historical documentation, newspaper articles, and oral interviews. The goal of the Market Street Chinatown archaeological project since the inception of its community-based research in 2002 was to fill in the gaps of Overseas Chinese American history that was tainted by an anti-Chinese movement that led to an act of arson that destroyed Market Street Chinatown in 1887 and other acts of discrimination.¹⁴⁶ Material culture serves as an alternative source of information in the study of community identity when textual documentation is deficient or unequally represented. Unequal representation often stems from historical circumstances that marginalised specific social groups, leading to inadequate documentation of their memories and identities. These circumstances are investigated as “vectors of social inequality,”¹⁴⁷ which explores other factors that contributed to the marginalisation of peoples aside from the consideration of status. Factors include ethnicity and gender. Consequently, the lack of textual documentation for a particular group, community, or culture hampers research attention on them. Voss suggests that recurring designs on Chinese ceramics at sites with Chinese residents signal the initial presence of a centralised network that connected Chinese manufacturers and merchants around the world.¹⁴⁸ In this sense, the analysis of Chinese ceramics data centred on the Chinese American community offers a glimpse into

¹⁴⁶ Barbara L. Voss et al., “Market Street Chinatown Archaeology Project Ten Years of Community-Based, Collaborative Research on San Jose’s Historic Chinese Community,” *History and Perspectives: The Journal of the Chinese Historical Society of America* 2013:63–75.

¹⁴⁷ Orser, “Twenty-first-century,” 125.

¹⁴⁸ Barbara L. Voss, “Towards a Transpacific Archaeology of the Modern World,” *International Journal of Historical Archaeology*, Vol. 20, No. 1 (2016): 164, accessed April 20, 2023, <https://www.jstor.org/stable/26174195>.

their history through interconnected business relations, traceable commercial activities, and cultural practices inferable through the functions of vessels.¹⁴⁹

Voss' later study of ceramics from selected locations at Market Street Chinatown demonstrates how material presence can represent the intentionality of consumers.¹⁵⁰ This utilization of material culture as a source of historical information aims to interpret beyond the standard objectives of understanding ceramic function and economic representation. Her methodology is concerned with examining and comparing British refined earthenware with Chinese porcelains to determine if overseas Chinese who lived in Market Street Chinatown were acculturated to the "serious games" or dominant social norms of Victorian-era genteel dining practices.¹⁵¹ This analysis classifies the ceramic sub-assemblage into arbitrary patterns of pragmatism and play. The degree of functionality or pragmatism and the more spontaneous consumption of British refined earthenware were identified by the patterns presented by archaeological material and supporting historical documentation.¹⁵² She concludes that British wares that were common signifiers of Victorian dining habits of that era were "not evidence of acculturation, emulation, or impression management" in Chinatown.¹⁵³ This claim is supported by the recorded 73.5% of Chinese porcelain vessels that made the total MNV count of ceramics from three locations at Market Street Chinatown, which surpassed the quantifiable presence of British refined earthenware (24.5%) by a significant margin.¹⁵⁴ Most British earthenware vessels recovered were also considered extra-large (>20cm rim diameters) compared to Chinese porcelains that had a larger quantity of medium-sized (10-15cm rim diameters)

¹⁴⁹ Voss, "Towards a Transpacific Archaeology," 164.

¹⁵⁰ Barbara L. Voss, "The Archaeology of Serious Games: Play and Pragmatism in Victorian-era Dining," *American Antiquity*, Vol. 84, No. 1 (2019): 43, accessed April 25, 2023, doi:10.1017/aaq.2018.72.

¹⁵¹ Voss, "Serious Games," 27.

¹⁵² Voss, "Serious Games," 43.

¹⁵³ Voss, "Serious Games," 43.

¹⁵⁴ Voss, "Serious Games," 36.

bowls.¹⁵⁵ This comparative difference in vessel form types indicates that the Chinese who lived in Chinatown were still eating out of Chinese porcelain bowls based on the prevalence of medium-sized bowls and were possibly using a mix of larger British or Chinese wares for serving dishes.¹⁵⁶

Voss' exploration of the 'continuum of intention' in the analysis of ceramic consumption emphasises the conclusion that the frequency of certain Chinese porcelain designs and forms within the MNV count can serve as an indicator for discerning consumers' pragmatic or playful engagement with porcelain choices.¹⁵⁷ However, the specific function associated with ceramic forms at IKG is problematic due to the indeterminable nature of consumers of Chinese porcelain, unlike those from Market Street Chinatown, whose Chinese consumers were certainly using bowls for the consumption of rice. Hence, this thesis focuses on comparing porcelain decorations in investigating the similarities and differences between IKG and overseas sites to understand consumption patterns that pertain to market access of specific decoration types, instead of localised functions of specific vessel forms.

Another reason the Market Street Chinatown site is suitable for comparison with IKG is due to the fact that much existing scholarship on ceramics and overseas Chinese archaeology has used its data as a case study for comparison with other archaeological sites. Overseas Chinese archaeology has expanded into new geographical territory in recent years with the initiation of *qiaoxiang* (Chinese migrants' home villages) studies. *Cangdong* Village in the *Kaiping* County of the *Guangdong* Province is one such *qiaoxiang*, home to the *Xie* Clan. In the nineteenth century, at least 85% of its villagers migrated to North America, Southeast Asia,

¹⁵⁵ Voss, "Serious Games," 37 – 38.

¹⁵⁶ Voss, "Serious Games," 38 – 39.

¹⁵⁷ Voss, "Serious Games," 43.

and Hong Kong.¹⁵⁸ Scholars of Chinese migrant communities agree that migrants from respective clans often remained in communication with their ancestral villages, creating a kind of territorial expansion to improve the social and economic prospects of their people.¹⁵⁹ This was no different for the migrants of the *Xie* Clan whose peripatetic attitude living abroad enabled them to send remittances to their family, contribute to the development of *Cangdong's* infrastructure, and visit their ancestral homes at appropriate junctures in their careers.¹⁶⁰

Transnational Lives of Chinese Migrants is the product of a pilot study of *qiaoxiang* archaeology, which aims to demonstrate change and continuity across the lives of Chinese migrants living abroad and back at their home village.¹⁶¹ The publication comprises a section that uses the MNV analysis to quantify vessels that were classified into standardised size grades like those applied to the data collected from Market Street Chinatown. Chinese porcelain recovered from *Cangdong* Village was associated with Chinese consumers who inhabited the site based on the dominant population proportions just as the sub-semblage from Market Street Chinatown was. In such cases, Voss infers that the prevalence of certain vessels, such as medium-sized bowls, could reasonably suggest the continuity of cultural practices that involved diners holding individual bowls that would contain rice, porridge, or soup.¹⁶²

Another report published as a comparative study between *Cangdong* Village and the Market Street Chinatown sites titled “The Archaeology of Home” examines the stark contrast between the China-produced ceramics from the two locations. Researchers learnt that

¹⁵⁸ Barbara L. Voss, Ryan Kennedy, and Selia Jinghua Tan, “Historic Context and Cultural Setting of Cangdong Village,” in *The Transnational Lives of Chinese Migrants: Material Culture Research from a Guangdong Province Qiaoxiang*, trans. Jiajing Wang, Yahui He, and Ran Chen, ed. Barbara L. Voss and Ryan Kennedy (California: Stanford Archaeology Center, 2019), 16.

¹⁵⁹ Voss, Kennedy, and Tan, *Transnational Lives*, 12.

¹⁶⁰ Voss, Kennedy, and Tan, *Transnational Lives*, 16.

¹⁶¹ Voss, Kennedy, and Tan, *Transnational Lives*, 18.

¹⁶² Barbara L. Voss, “Analysis of Table Ceramics,” in *The Transnational Lives of Chinese Migrants: Material Culture Research from a Guangdong Province Qiaoxiang*, trans. Jiajing Wang, Yahui He, and Ran Chen, ed. Barbara L. Voss and Ryan Kennedy (California: Stanford Archaeology Center, 2019), 87.

qiaoxiang residents tended to consume more locally produced wares from their province than elsewhere in China whereas Chinese migrants living abroad were more likely to consume ceramics from “*Gaobei* and *Jingdezhen* [and] major pottery centres located in northeast Guangdong Province and Jiangxi Province.”¹⁶³ The difference in access to separate production sites was realised in the comparison of bowls with the double happiness decorations.¹⁶⁴ The interaction with different ceramic production sites between Cangdong Village and Market Street Chinatown during the nineteenth century illustrates the possibility that Chinese individuals both in China and overseas relied on distinct manufacturers for acquiring porcelain products. The differences in porcelain from these two geographic locations offer an opportunity for the comparison of porcelain designs from IKG, which could highlight its inhabitants’ access to specific types of porcelain.

A comparative approach to the study of nineteenth and twentieth-century Chinese porcelain has yet to be accomplished in Singapore. Such an analysis involving multiple sites with a well-established identification system paves the way for broader interpretations of archaeological data, situating the archaeological information from IKG, for example, in the context of a transnational network. The extent of transnational networks in this thesis is discussed in terms of respective inhabitants’ access to similar porcelain decorations despite their separation by geography. However, the limitations of comparing market access to similar producers lies in the spread of porcelain designs that were adopted by various manufacturers in China. Hence, it is important to define access as the ability to acquire specific decorations in recognising that these designs were not representative of a single production site unless stated otherwise. The primary objective is to know what porcelain types, with an emphasis on

¹⁶³ Barbara L. Voss et al., “The Archaeology of Home: Qiaoxiang and Nonstate Actors in the Archaeology of the Chinese Diaspora,” *American Antiquity*, Vol. 83, No. 3 (2018): 407, accessed January 31, 2023, doi: <https://doi.org/10.1017/aaq.2018.16>.

¹⁶⁴ Voss et al., “Archaeology of Home,” 416.

decorations, were available to the inhabitants of IKG and how did they compare with Chinese porcelain from Cangdong village and Market Street Chinatown.

The initial step in these analytical processes involves the establishment of a classification typology to categorise the extensive collection of Chinese porcelain sherds into distinct analytical units based on diagnostic attributes. These attributes encompass glaze colour, form structure, and decorative elements, which include motifs and the layout of decorations. Identification of these attributes expands the understanding of what types of wares were available at IKG and to what extent were potentially in demand based on quantitative data. The following chapter presents these attributes that determine the typology of nineteenth and twentieth-century Chinese porcelain from IKG.

CHAPTER FOUR CHINESE PORCELAIN TYPOLOGY

The main goal of this paper is to determine the types of Chinese porcelain that were historically available to the inhabitants of IKG and the surrounding neighbourhood during the nineteenth to early twentieth centuries. The establishment of a typology serves as the primary means to address this concern. This system of classifying porcelain provides attributional information for a more accurate comparison of porcelain recovered from Market Street in California and Cangdong Village in Guangdong. Similar and distinct attributes identified on porcelain sherds across the different sites reflect the extent of a global network that connected distinct markets for Chinese porcelain.

The development of this Chinese porcelain typology delineates the glaze, form, and decoration types for further analytical examination. This identification system primarily serves a descriptive purpose, providing a comprehensive survey of porcelain categories. The various categorical ‘types’ described in this chapter are classified by their attributes. These attributes are visually analysed and described, with support from photographs and references to previous research and documentation. Quantitative data of various scales are presented to assess the proportions of artefacts within the Chinese porcelain sub-assembly. Scale also presents the extent to which certain types of porcelain forms and designs were available at IKG as compared to the other sites.

Glaze types

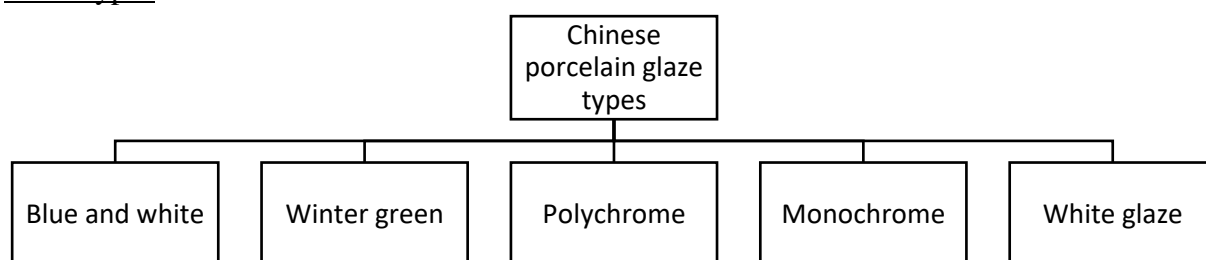


Table 4. 1 Typological classification chart of Chinese porcelain glaze types.

The amorphous substance known as "glaze" was initially applied to porcelain in China during the Shang and Zhou periods, taking the form of a less translucent coating compared to later periods.¹⁶⁵ Glaze resembles glass in terms of appearance and physical properties. It is applied to the surface of bisque-fired wares for aesthetic and practical purposes. Glaze formation is influenced by two primary variables: the raw materials introduced into the glaze mix, which determines its chemical composition, and the firing process that transforms the substance into a glassy state at high temperatures, typically around 1200°C.¹⁶⁶ While the typology of Chinese porcelain examined in this thesis focuses less on the technical aspects of glaze attributes, it is important to note that chemical compositions do influence glaze colours. The perceptible attribute of glaze colour contributed extensively to the identification of different types of glazes.

There are five types of Chinese porcelain glazes identified at IKG (table 4.1): blue and white, winter green, polychrome, monochrome, and white. A glaze type can consist of one glaze, or a combination of multiple glazes layered over the surface of the porcelain body. Each of these glazes possesses intrinsic attributes that are visually telling of their types. A key intrinsic attribute that determines the naming convention of glaze types is the colour of glaze visibly present on the sherd. In some cases, the technical application of glazes can also contribute to the distinction of glaze types, especially when the colours of the glazes are similar.

Underglaze and overglaze techniques are glaze applications that enhance the overall appearance of a porcelain vessel when paired with the main layer of glaze. An underglaze refers to the pigment beneath the clear outer glaze, often used as a contrasting decorative feature juxtaposing with the solid colour of the porcelain or main layer of glaze, if the glaze is coloured. An overglaze refers to the pigment applied over the glaze layer. Porcelain decorated with an

¹⁶⁵ Jiazhi Li and Juan Wu, "Formation and Development of Ancient Chinese High Temperature Porcelain Glaze Technology," in *Development History of Ancient Chinese Glass Technology* 3, ed. Fuxi Gan, Hong Li, and Lisong Hou (Singapore: World Scientific Publishing Company, 2021), 559.

¹⁶⁶ Li, "Porcelain Glaze Technology," 559 – 569.

overglaze commonly exhibits a textured surface. A glaze type, such as particular polychrome pieces, can possess both overglazes and underglazes. Certain types of glazes are also identified according to the absence of underglaze and overglaze techniques. Such glaze types are characterised by a single layer of glaze that exhibits one dominant colour across the entire surface of the vessel. This dominant colour can be attributed to the pigmentation of the glaze, the colour of the porcelain body in cases where a clear glaze was applied, or a combination of both factors.

Glaze types	Sherd count	Sherd count proportion	Weight (g)	Weight proportion
Blue and white	679	44.67%	12119.7	58.95%
Winter green	60	3.95%	820.35	3.99%
Polychrome	320	20%	5057.8	24.60%
Monochrome	14	0.92%	105.1	0.51%
White	447	29.41%	2457.65	11.95%
Total	1,520	≈100%	20560.6	100%

Table 4. 2 Quantitative proportions of glaze types in the Chinese porcelain sub- assemblage at IKG.

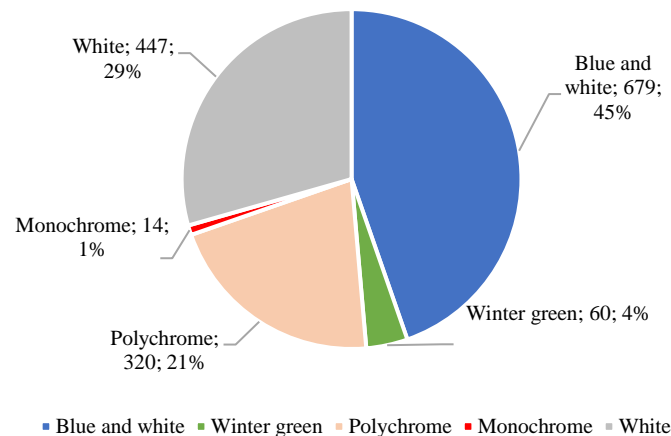


Table 4. 3 Pie chart illustrating proportions of glaze types.

Table 4.2 presents the proportions of different glaze types at IKG, as denoted by the number of sherds and their respective weights. The dominant glaze type is blue and white, which surpasses the polychrome glaze – the second most prevalent glaze type – in both sherd

count and total weight by a significant margin. The blue and white glazed sherds account for more than half of the total weight (12,119.7g or 58.95%) of the 1,520 sherds in the Chinese porcelain sub-assembly. The prevalence of blue and white sherds at IKG indicates the widespread availability of this glaze type in the porcelain market, thereby suggesting its relatively high demand and supply during the nineteenth century. This implication is similarly supported by the ubiquity of blue and white vessels recovered from nineteenth century overseas sites discussed in this thesis.

Despite the white glaze type comprising a significantly higher number of sherds (447), the total weight of white glazed sherds is less than half the weight of polychrome sherds, which amount to 320 sherds. There are two potential explanations for this outcome on a technical level. The first explanation is that polychrome sherds may be larger in size, resulting in greater weight and possibly indicative of larger vessel forms compared to white glazed types. The second explanation, which is contingent upon the reasoning of the first, is that larger vessels tend to be more durable, leading to reduced fragmentation during disposal or any action that might have resulted in breakage. This outcome further demonstrates that sherd quantification alone does not serve as a reliable indicator of relative scale.

Winter green and monochrome glazes are the least significant glaze types in the IKG Chinese porcelain sub-assembly. Together, they make up less than 5% of the total sherd count and weight. However, the presence of these less numerous glaze types is as important as the other glaze types as their presence signals the availability and potential market for such wares regardless of how small their quantities are.

Glaze type: blue and white

The Chinese blue and white glaze type at IKG is achieved by employing a cobalt mixture, as an underglaze, for the painting of ornamental patterns and symbolic designs on

bisque-fired wares. The initial development of Chinese blue and white during the late Yuan period aimed to use cobalt as a material that could match the hues of the lapis lazuli, a highly prized mineral in the Islamic world.¹⁶⁷ This colour was also referred to as “Muslim blue” or *huihui qing* in Chinese as to reference the Islamic merchants and consumers that commissioned blue underglaze porcelain vessels from Jingdezhen that were glazed with imported Persian cobalt from Southwest Asia.¹⁶⁸ However, by the nineteenth century, cobalt blue underglaze had undergone numerous technical alterations, leading to a diverse range of blue hues. These variations were influenced by different sources of cobalt with varied levels of purity and compositional combinations driven by numerous production considerations.¹⁶⁹

The blue and white glaze type is equally prevalent among Japanese and European sherds as it is among the Chinese porcelain sherds in the IKG assemblage. The main attribute that distinguishes the Chinese blue and white glaze type from vessels of other origins is the greyer and less saturated blue hue of the underglaze. Archaeological comparisons between Chinese and Japanese blue and white vessels from overseas Chinese sites in the United States have revealed that nineteenth century Chinese blue colouring tends to be less intense due to the lower concentration of cobalt oxide.¹⁷⁰ This distinction between colour intensity aligns with the characteristics observed in the Chinese and Japanese blue and white sherds identified at IKG.

The technique that was commonly used by Chinese potters to apply blue underglaze was hand painting in contrast to the Japanese and European manufacturers who were more

¹⁶⁷ Robert Finlay, *The Pilgrim Art: Cultures of Porcelain in World History*, 1st ed. (University of California Press, 2010), 158.

¹⁶⁸ Finlay, *Pilgrim Art*, 139 – 158. Finlay explains that the term for religion in Chinese is *huijiao*. The term “*huihui*” was first used by Chinese during the Song era to refer to the Uighurs, an ethnic minority group that resided along the section of the Silk Road that intersected China, who had embraced Islam. Hence, *huihui qing* in this context means “Muslim blue”.

¹⁶⁹ Alison Stenger, “Sourcing and Dating of Asian Porcelains by Elemental Analysis,” in *Hidden Heritage: Historical Archaeology of the Overseas Chinese*, ed. Priscilla Wegars (New York: Baywood Publishing, 1993), 316 – 321.

¹⁷⁰ Stenger, “Sourcing and Dating,” 324.

inclined to rely on stencil and transfer printing methods of decoration. Hand painted underglaze is often noticeable with the varied intensity of blueness that diminishes at the length of the brushstroke. Likewise, blue hand painted underglaze commonly exhibits a more deliberate exertion of intensity with the controlled strength of each stroke. Sherd 4.1d illustrates the varied intensities of the brushstroke identified by the faded sections of the decorative panels closest to the base as compared to the blue floral scrolls that stretch across the vessel's body. Figure 4.1 illustrates the flatness of colour in the Japanese and European stencil and transfer printed sherds, respectively, as compared to the Chinese hand painted underglaze sherd in the middle column. Sections on the Japanese and European sherds display an oversaturation of blue glaze, suggesting the lower capacity for control in the application of underglaze through industrial mass production methods of manufacture. Archaeological evidence from overseas Chinese sites shows that Chinese potters were unlikely to have produced transfer printed wares until the post-Qing period in 1912.¹⁷¹ The contrast in blue underglaze application highlights the Chinese potters' inclination towards manual manufacturing processes in the nineteenth century, despite the availability of alternate means for mass production.



Figure 4. 1 Examples of the blue and white glaze type.

Left column: Japanese stencil printed cup (top 4.1a) and bowl (bottom 4.1b); middle column: Chinese painted underglaze bowls (top 4.1c and bottom 4.1d); right column: European transfer printed wares (top 4.1e and bottom 4.1f) recovered from IKG.

¹⁷¹ Stenger, "Sourcing and Dating," 324.

The Chinese porcelain sherds, 4.1c and 4.1d, demonstrate two common varieties of blue underglazes observed at IKG. The underglaze on sherd 4.1c has a blueish-grey shade that appears greenish against its greyer porcelain body, in comparison to the white body of sherd 4.1d. Such an appearance of glaze is similarly observed in some Chinese porcelain sherds recovered from Cangdong Village described as a “blueish-grey or greenish-grey white colour” that are colours attributed to Chinese porcelains from Southern China between the nineteenth and early twentieth century.¹⁷² Likewise, grey Chinese porcelain bodies were reported in archaeological materials recovered from Sacramento, California.¹⁷³ The presence of multiple grey-bodied porcelains across various sites suggests that darker clay mixes were deliberately created. While the reasons for darker clay bodies are indefinite, a speculative explanation could be that a darker body accentuates the underglaze designs on the surface of porcelain vessels. The lighter variety of blue underglaze on sherd 4.1d represents most Chinese blue and white sherds at IKG. This blue underglaze is typically applied on a whiter clay body though greyness is still present in porcelain sherds that indicate slight variations in clay mixes and sources.

Glaze type: winter green

The winter green glaze type is a single-coloured ware that is not decorated with moulded or incised designs. This glaze type refers to a specific bluish jade green and is distinct from monochromatic green wares. Earlier archaeologists often document the winter green porcelain under the misnomer, “celadon”.¹⁷⁴ However, the title is a contested term that adds no

¹⁷² Voss, “Analysis of Tableware Ceramics,” 71.

¹⁷³ Virginia R. Hellmann and Jeannie K. Yang, “Special Studies: Previously Undocumented Chinese Artifacts,” in *Historical Archaeology in an Overseas Chinese Community in Sacramento, California, Volume 1: Archaeological Excavations*, ed. Mary Praetzellis and Adrian Praetzellis (California: Sonoma State University Academic Foundation, 1997), 165.

¹⁷⁴ Choy, “Interpreting “Overseas Chinese” Ceramics,” 6.

value to the historical context of the popular, green-glazed ware commonly found in nineteenth century archaeological sites where Chinese porcelain is present. The early twentieth century antiquarian R. L. Hobson notes that the term “celadon” derives from a character in the seventeenth century play titled, *L'Astrée*, whose attire traditionally incorporates a greenish-grey garment.¹⁷⁵ He references a study of the *Jingdezhen taolu*, a compilation of porcelain production processes commissioned by the Qing court, which technically documents the celadon glaze at Jingdezhen as a combined product of iron from a ferruginous source, lime from common white glaze, and a small proportion of cobalt, to produce a dark green coloured glaze that reflects a blueish tint.¹⁷⁶ Hobson acknowledges that the definition of celadon has no clear geographic distinction even though such vessels from different locations in China exhibited unique traits.¹⁷⁷ In the same vein, he refers to Jingdezhen green-glazed wares as celadon despite their statuses as imitations of the traditionally produced celadons from Longquan.¹⁷⁸ Recent scholars of the archaeological science defines the celadon in a set of criteria; celadon wares are made with porcelain stone clay or kaolin that undergoes a series of chemical reactions, which results in a mullite structure, and the presence of high fired green glaze on the surface, typically fired between 1050 and 1250°C.¹⁷⁹ Christie’s Auction House defines the celadon as a green ware with a “soft-grey-green-coloured glaze” that is attributed to an iron concentrated slip.¹⁸⁰ These examples of historical, scientific, and enthusiast definitions of the celadon ware characterises the vagueness of the term that diminishes the analytical potential of a typology.

¹⁷⁵ R. L. Hobson, “Wares of the Sung and Yuan Dynasties-III. Celadon,” *The Burlington Magazine for Connoisseurs* 15, no. 75 (1909): 160, accessed May 20, 2023, <https://www.jstor.org/stable/857958>.

¹⁷⁶ R. L. Hobson, “Celadon,” 163.

¹⁷⁷ R. L. Hobson, “Celadon,” 160.

¹⁷⁸ R. L. Hobson, “Celadon,” 163.

¹⁷⁹ Wenjing Li et al., “The definition and origin of celadon – A re-discussion on the name of proto-celadon,” *Journal of Archaeological Science: Reports* 46 (2022): 3, accessed March 12, 2023, <https://doi.org/10.1016/j.jasrep.2022.103687>.

¹⁸⁰ “Collecting guide: Chinese celadon ware ceramics,” Christie’s, accessed May 23, 2023, <https://www.christies.com/features/Celadon-Ware-Collecting-Guide-9455-3.aspx>.

“Winter green” is a suitable term that represents a more relevant linguistic signification in the context of historical archaeology considering its historical usage during period of study. The term entered archaeological terminology following the discovery of the Kwong Tai Wo inventories in California, which contained vernacular names for Chinese porcelain products sold in a general store.¹⁸¹ The Chinese characters for this entry in the inventories are 冬青 (*dong qing*), which translates to winter green.¹⁸² It is probable that the term "winter green" was commonly employed by both merchants and consumers during the nineteenth century, considering the historical urban context of the Chinese overseas site where these records were discovered.

John Olsen suggests that *dong qing* could have also been “a corruption... of its written form,” of 東青 (*dong qing*), which means eastern green though pronounced the same as 冬青.¹⁸³ He explains that *dong qing* is a term used by southern Chinese, whereas in the north, such wares were referred to as *qing bai*, which means “green-white”.¹⁸⁴ Stenger expands on this possibility by suggesting that the term eastern green could have been referring to the type of green porcelain that was produced in Japan, which is geographically located east of China.¹⁸⁵ The more recent typological study by Choy claims that winter green wares were produced in Jingdezhen, as confirmed by his visit to the Jingdezhen Jiayang Ceramic Company and Jingdezhen Ceramics University where winter green wares were presented at exhibits as locally produced ceramics.¹⁸⁶ Likewise, Barry’s personal communication with a Chinese ceramic specialist corroborates the origins of winter green glazed wares as a product of Jingdezhen and possibly Fujian, though she uses the term “Qing Green” with no substantial explanation for the

¹⁸¹ Sando and Felton, “Inventory Records of Ceramics,” 153.

¹⁸² Sando and Felton, “Inventory Records of Ceramics,” 157.

¹⁸³ John W. Olsen, “A Study of Chinese Ceramics Excavated in Tucson,” *Kiva* 44, no. 1 (1978): 18, accessed February 19, 2023, <https://www.jstor.org/stable/30247655>.

¹⁸⁴ Olsen, “Ceramics Excavated in Tucson,” 18.

¹⁸⁵ Stenger, “Sourcing and Dating,” 325.

¹⁸⁶ Choy, “Interpreting “Overseas Chinese” Ceramics, 6.

naming convention.¹⁸⁷ Hence, it is reasonable to agree that winter green wares were of Chinese and not Japanese origin although other kinds of green monochromatic wares with blueish green exteriors and white interiors were popularly produced in Arita and Seto kilns in Japan.¹⁸⁸

The winter green is sometimes referred to as a monochromatic green glaze.¹⁸⁹ However, the winter green glaze type is intentionally distinguished and separated from the monochrome glaze type in this typology to acknowledge its unique characteristics and widespread presence in Chinese porcelain archaeological collections from the nineteenth and early twentieth centuries. Similarly, the winter green glaze is distinctly different from the green ware of the Yuan and Ming periods, which have also been recovered in large quantities in Singapore's archaeological sites. Such a difference is illustrated in figure 4.2, which exhibits the contrast between a nineteenth century winter green sherd from IKG and a Longquan-type green ware sherd, dated between the fourteenth and sixteenth century, from the Empress Place archaeological site in Singapore. The winter green glaze in 4.2a is highly translucent. Its glaze colour is a light jade green with a tint of blue, typically thin enough for the visibility of the white porcelain body beneath the glaze. Most winter green glazes demonstrate a propensity to appear whiter towards the lip of the rim. This is possibly indicative of a relatively diluted glaze with a lower viscosity compared to other types of glazes that do not demonstrate the same gradation of colour. A brown lip is also commonly found on winter green rims. Whether the browning of the lip was deliberate or not requires a separate technical study. Nonetheless, it is important to acknowledge the presence of a thin glossy layer across the brown lip, indicative of glaze or slip applied to its surface. The Longquan-type green ware in 4.2b has a more consistent and duller shade of green. Its glaze is thicker and more evenly applied across the grey clay body. These differences exemplify some of the contrasting

¹⁸⁷ Barry, *Pulau Saigon*, 24.

¹⁸⁸ Stenger, "Sourcing and Dating," 327.

¹⁸⁹ Stenger, "Sourcing and Dating," 325.

glaze attributes between nineteenth century winter green wares and monochromatic green wares of an earlier period.



Figure 4. 2 Examples of the winter green glaze types.

From left to right: winter green sherd with rim from IKG (4.2a) and Longquan-type green ware sherd with rim from Empress Place (4.2b).

Glaze type: polychrome

The polychrome glaze type from IKG refers to various wares with coloured glazes – other than vessels solely decorated with the cobalt blue glaze – applied over or under a clear glaze or a dominant glaze of a different colour. This dominant glaze is typically transparent, which exposes the whiteness of the bisque-fire porcelain. Polychrome glazes often consist of one or multiple coloured overglazes used to decorate the porcelain with intricate designs. However, coloured transfer printed wares, underglazes, and a mix of different glazing techniques combined with a dominant glaze colour or a clear glaze, are also classified under the polychrome glaze type. As such, the polychrome glaze type is not defined by the technical application of glazes, but rather by the colours of the glazes and their combinations that do not fit into the criteria of other glaze types. The reason for this broad categorical unit is due to the large variety of glaze colours and decorations that share similar thematic attributes such as contrasting colours, and the presence of floral and geometric patterns. This method of

identification is similarly used to distinguish polychrome porcelain wares in other nineteenth - century archaeological sites.

The historical development of polychrome glazes has proven a challenge to trace due to the multiplicity of dissimilar glaze varieties. However, one of the common attributes of the polychrome glaze type, the enamelled overglaze, has been recognised by scholars as having been introduced to Chinese potters through the transmission of knowledge from foreign delegates.¹⁹⁰ Enamel was first introduced to the Qing court by craft specialists from Italy and France during the late seventeenth and early eighteenth centuries to provide the knowledge required for enamel painting and production.¹⁹¹ However, these enamellers often did not meet the standards of the Emperor, resulting in a demand for craft books from European missionaries that could provide the palace workshop with the fundamental knowledge required for enamel crafts.¹⁹² This paved the way for experimental enamel production, painting and firing on porcelain.¹⁹³ During the reign of Emperor Yongzheng, the palace workshop refined nine specific colours from the European palette and introduced nine new colours to the selection of enamels, reflecting the Emperor's aesthetic preferences.¹⁹⁴ Advances in the complex methods of mixing colouring agents, layering of coloured enamels, and executing the delicate process of long and slow firing sequences enabled the overglaze technique to be widely used in China.¹⁹⁵ The quality and consistency of polychrome wares recovered from IKG are not equivalent to those produced in the palace workshop. Nonetheless, the variability of colours observed on the polychrome sherds attests to the historical experimentation with enamels that

¹⁹⁰ Xu Xiaodong, "Europe– China– Europe: The Transmission of the Craft of Painted Enamel in the Seventeenth and Eighteenth Centuries," in *Goods from the East, 1600-1800: Trading Eurasia*, ed. Maxine Berg and Felicia Gottmann (London: Palgrave Macmillan, 2015), 93.

¹⁹¹ Xu Xiaodong, "Transmission of the Craft," 95 – 96.

¹⁹² Xu Xiaodong, "Transmission of the Craft," 95 – 97.

¹⁹³ Xu Xiaodong, "Transmission of the Craft," 95 – 97.

¹⁹⁴ Xu Xiaodong, "Transmission of the Craft," 98.

¹⁹⁵ Philippe Colombar, Anh-Tu Ngo, and Nicolas Fournery, "Non-Invasive Raman Analysis of 18th Century Chinese Export/Armorial Overglazed Porcelain: Identification of the Different Enameling Techniques," *Heritage* 5, no. 1 (2022): 234, accessed June 7, 2023, <https://doi.org/10.3390/heritage5010013>.

captivated imperial potters upon the introduction of enamel to China. The wide variety of enamel colours could also suggest that potters at commercial production sites were freer to innovate outside of the imperial court's aesthetic specifications.

Polychrome sherds at IKG display a range of glaze qualities as determined by the extent of glaze retention. The multiple layers of glazes on polychrome porcelain wares are susceptible to degradation, which often results in fading and discolouration. Figure 4.3 illustrates some polychrome glaze techniques with intact glazes. 4.3a and 4.3b exemplifies different types of enamelled overglazes. It is notable that lighter coloured overglazes, such as the light brown, yellow, and white enamels illustrated in figure 4.3, tend to discolour quicker than the darker colours. This issue has made it difficult for the study of lighter coloured enamels that could possibly blacken or fade, resulting in inaccurate descriptions of original overglaze colours. As such, the classification of specific overglaze colours cannot be properly addressed in this typology, though certain decorative trends are discussed in a later section of this chapter.



Figure 4. 3 Examples of the polychrome glaze type.

Top (from left to right): red and brown overglaze Chinese character and patterns (4.3a), and multiple coloured overglazes outlined with black enamel (4.3b). Bottom, from left to right: red and blue underglazes (4.3c), and green and pink transfer printed bowl (4.3d).

4.3c is an example of a polychrome sherd with two underglazes; they are red and blue in colour. Voss has employed the term “bichrome” to describe such porcelain vessels with two coloured glazes in her report of Chinese ceramics from Cangdong Village.¹⁹⁶ However, splintering polychromes into further categories based on the number of colours is counterproductive in this typology, considering the fragmented and varied nature of polychrome sherds. It is difficult to determine that an entire polychrome vessel only has two glaze colours based on one sherd that represents a small fraction of the whole. Likewise, the two-colour transfer printed polychrome vessel in 4.3d is clumped into the polychrome glaze type without further splintering into smaller categories.

Both 4.3c and 4.3d, which represent polychrome wares with underglaze and transfer print respectively, are comparatively different than the overglaze polychrome sherds in terms of appearance and texture. The overglaze sherds present brighter colours partly because of their highly concentrated pigments. They are also applied onto the outermost layer of the porcelain, above the glaze layer, which differ from the underglaze sherd that is applied beneath the clear glaze. As such, polychrome wares with underglazes tend to be less vibrant due to the additional glaze layer that reduces its intensity. Unlike the nineteenth century transfer printed wares from Japan and Europe, Chinese transfer prints were applied over the clear glaze layer. The consistency of details and colours exhibited by 4.3d are evidence of the advanced transfer printing technology that enabled the reliable production of mass-produced porcelains.

Glaze type: monochrome

The monochrome glaze type identified at IKG is a limited category with few examples available for an in-depth analysis. Only 14 out of the 1,520 sherds were identified as

¹⁹⁶ Voss, “Analysis of Tableware Ceramics,” 83.

monochrome glaze types. Monochrome refers to single-coloured wares that do not belong to winter green and white glaze types. For this reason, monochrome wares do not have a combination of glazes that reflect multiple colours.

The provenance of nineteenth century commercial monochrome wares in China is ambiguous. The sherds from IKG are distinctly different from the monochromatic porcelains associated with export wares distributed to the West, which were displayed as ornaments in hotels and chateaux.¹⁹⁷ Their glazes are applied to coarser porcelain bodies with less consistent colours throughout the sherd. Barry notes that monochrome glazed wares of this calibre were popularly produced in Jingdezhen and Fujian in the nineteenth century.¹⁹⁸ However, Barry was specifically referring to “dark blue and coral-red monochrome”¹⁹⁹ wares from PSG that are not present in the IKG assemblage. Monochrome glaze types are also absent from existing typologies, making their origins uncertain.

Figure 4.4 illustrates some of the monochrome sherds recovered from IKG. Interestingly, the majority of monochrome glaze type sherds were green. While green sherds were often close to the tonality of the winter green glaze type, they were often less consistent and presented duller hues. These green glazed monochromes were also decorated with moulding techniques that instantly disqualifies them from the winter green category. Figure 4.4a presents an unusual pink sherd with a clay coarser clay body that is often associated with European white earthenware or porcelain. However, the bottom of its base is embossed with the broken off words “made in China”. There are two possible outcomes for the explanation of this anomaly. The first is that the sherd belongs to a European vessel that was falsely marketed as a China-made product, which could potentially draw a higher monetary value in the market. This explanation is highly likely as imitations and false marketing enabled by mass-production

¹⁹⁷ Robert L. Hobson, *Chinese Pottery and Porcelain: An Account of the Potter's Art in China from Primitive Times to the Present Day*. (New York: Dover Publications, Inc., 1976), 194.

¹⁹⁸ Barry, *Pulau Saigon*, 24.

¹⁹⁹ Barry, *Pulau Saigon*, 24.

from the nineteenth century was not uncommon. The second explanation is that Chinese ceramic manufacturers were using clay mixes similar or identical to the Europeans for commissioned works or to diversify their market. This explanation is less probable as no other ceramic wares with a similar clay body have been found and credited to Chinese producers. Similarly, Chinese porcelain bodies were generally of higher quality when compared to European wares. Therefore, there seems to be no apparent motive for Chinese potters to engage in market diversification on such a small scale that would leave limited to no archaeological evidence.



Figure 4. 4 Examples of the monochrome glaze type.

Top (from left to right): pink glazed sherd with embossed words on the exterior of base (4.4a), and green glazed sherd with unglazed base (4.4b). Bottom (from left to right): pale green glaze sherd (4.4c), and patchy green glazed sherd (4.4d).

Glaze type: white glaze

The white glaze type refers to any sherd that is solely coated in white glaze. This should not be confused with undecorated sherds with clear glazes that appear white from the whiteness of the porcelain body. However, not all white glaze vessels have the same consistency of glaze applied, resulting in some that appear patchier than others. Some white glazes are pastier and thicker in appearance, resulting in rougher surfaces than white glazes of finer porcelains. White glazed wares are also not associated with whitewares from the fourteenth to sixteenth centuries,

which are commonly found in archaeological sites in Singapore. Barry calls these white glazed wares from PSG “white ware”.²⁰⁰ Similarly, Voss employs the term "whiteware" (as opposed to white ware) to describe a green transfer printed sherd with an unknown origin.²⁰¹ Although it is uncertain whether "whiteware" refers to British refined whiteware, which was a common ceramic vessel used for transfer printed wares, the use of this terminology becomes misleading when applied in the context of Chinese porcelain. Therefore, in this typology, the terms "white glaze" or simply "white" glaze type are more appropriate to avoid confusion.

Figure 4.5 shows the difference between white glaze type sherds and the white ware from the late Yuan to Ming periods. Aside from glaze degradation of the older sherds, 4.5c and 4.5d display the bluish-grey tint of the white ware compared to 4.5a and 4.5b. 4.5a and 4.5b also reveal difference in the surface treatment with the former appearing glossier and smoother, and the latter appearing coarser with multiple pinhole marks possibly caused by air bubbles in the clay mix or glaze. Hence, the white glaze type is deceptively homogenous with variations that can vastly differ in glaze consistency.



Figure 4. 5 Examples of the white glaze type.

Top (from left to right): finer white glazed porcelain, IKG (4.5a), and coarser white glazed porcelain, IKG (4.5b). Bottom (from left to right): Dehua-type white ware, Empress Place (4.5c), and Ding-type white ware, Empress Place (4.5d).

²⁰⁰ Barry, *Pulau Saigon*, 28.

²⁰¹ Voss, “Analysis of Tableware Ceramics,” 84.

Blue and white decoration and form types

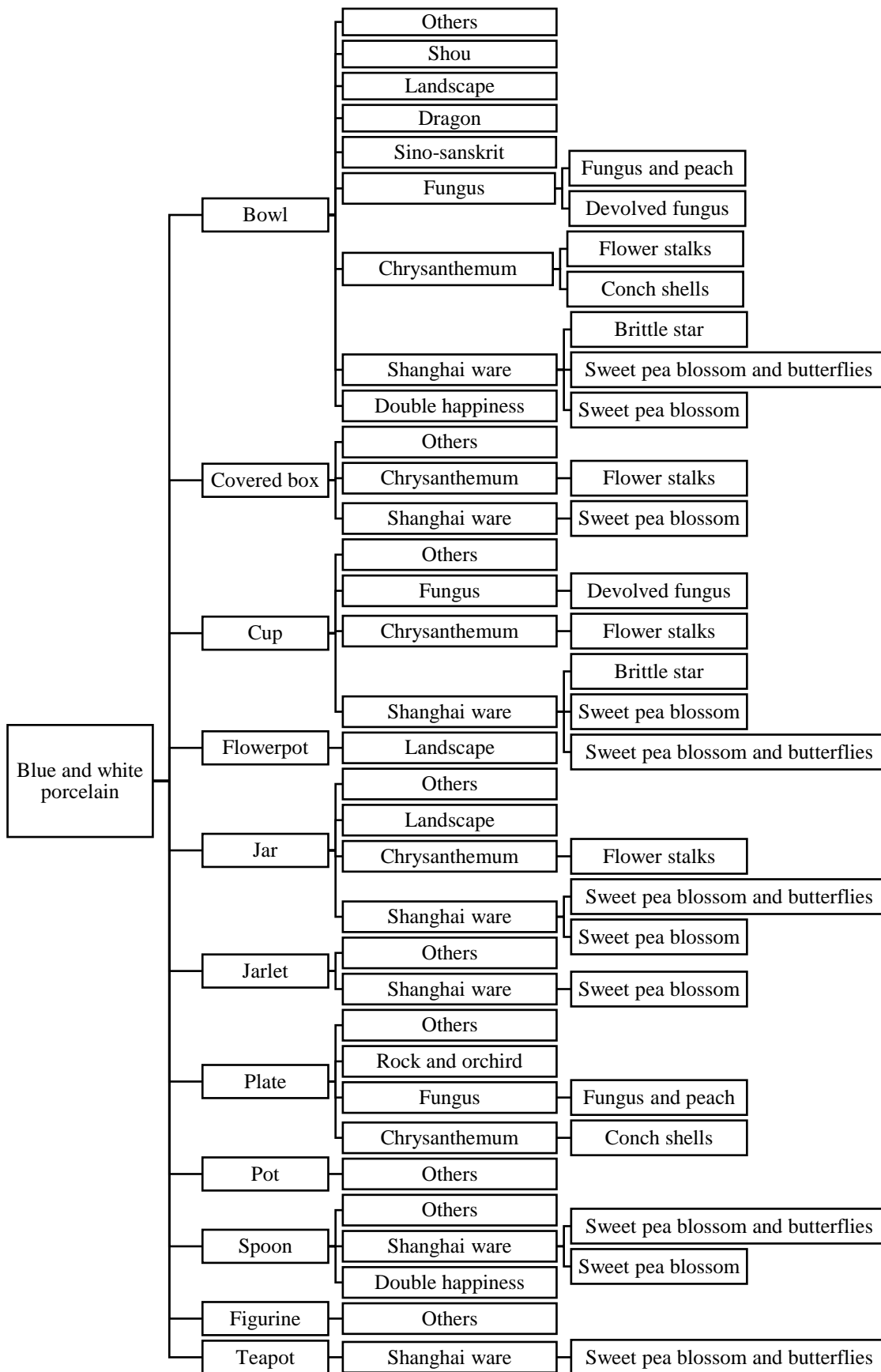


Table 4. 4
Typology
classification
chart of blue
and white
decoration
and form
types.
“Others”
refer to
unique
decorations.

Form types of porcelain wares are specific shapes that can be reproduced by manufacturers and are widely recognised by consumers as suitable objects for various purposes. The frequency of these forms provides insights into the potential functions of the wares and the habits of the inhabitants who may have used such porcelain at IKG. Forms are paired with various decorations to aesthetically enhance porcelain wares with stylised and thematic designs. These designs often include auspicious patterns and elements of the natural world. While decorations do not directly contribute to the function of porcelain wares, symbolic meanings of certain functions should not be dismissed.

On one hand, the frequency of decoration types has the potential to reveal the preferences of consumers, and to a greater extent, the choices made by producers in matching specific forms with decoration types. On the other hand, the absence or lack of historical records of consumer preferences limits the understanding of consumer choices. Furthermore, the symbolic meanings associated with Chinese patterns and iconography diminish over time, with their subject matter either being misinterpreted or losing significance in an era saturated by the global market.²⁰² Consumers were also likely diverse, making it even more difficult to determine if consumers were driven to purchase Chinese porcelain for their specific decoration type or solely based on the practicality and familiarity of the form. As such, any symbolic meanings of decorations described in this chapter are detached from the meanings perceived by consumers or producers.

A series of visual analyses and references to similar findings from local and overseas archaeological sites provides this section with the visual and historical context for understanding what types of forms and decorations were accessible to the people at IKG. The question of accessibility is emphasised to avoid speculation of how porcelain wares were functional or preferred by individuals or specific groups of people.

²⁰² Willets, "Introduction," 3.

Glaze type: blue and white Decoration type: double happiness				
Form types	MNV count	MNV proportionate to total MNV of decoration type	Total sherd count	Total weight of sherds (g)
Medium bowl (10cm - 15cm)	2	50%	56	1629.2
Large bowl (>15cm - 20cm)	2	50%		
Spoon	na	na	2	2
Total	4	100%	58	1631.2

Table 4. 5 MNV of vessel forms with double happiness decorations.

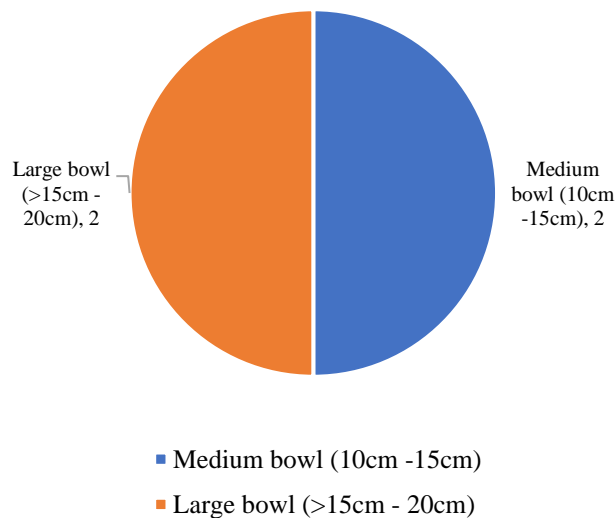


Table 4. 6 Pie chart illustrating MNV proportions of double happiness vessel forms.

The double happiness decoration is a common design comprising three pairs of *xi* (喜) – the Chinese character for happiness or joy – and spiralling scrolls that occupy the negative spaces between the characters. This auspicious motif is also termed *shuangxi* (双喜), meaning double joy. Parts of the scrolls resemble deformed flower petals and appear seemingly symmetrical, though scrolls are stylistically hand-painted, varying in thickness and length. The double happiness decoration is a relatively standardised underglaze design compared to other designs and should not be confused with decoration types with the *shuangxi* motif arranged in a different configuration. The decoration type was primarily applied to bowls – often referred

to by archaeologists as “rice bowls”.²⁰³ The rim and base sherds from IKG exhibit folded or rolled lips and thick foot rims respectively, which are consistent with the forms of double happiness bowls recovered from Cangdong Village and Market Street Chinatown. These bowls are also wide, considering their shallow vessel depth with an average height of 6.1cm.

Comparison between porcelain sherds from Cangdong Village and Market Street in California revealed two possible varieties of the double happiness design. However, these varieties are not included in this typology due to the small sample size of the decoration type. Double happiness vessels recovered at Cangdong Village have loosely applied decorations compared to the finer brushstrokes on vessels from Market Street Chinatown.²⁰⁴ Figure 4.6 demonstrates the contrast between double happiness bowls from the two overseas sites. 4.6b from Market Street Chinatown exhibits scrolls that are more regularly illustrated compared to 4.6a. Examples of double happiness decorations from IKG in figure 4.7 resemble the variety from Cangdong Village with freely painted Chinese Characters and overlapping scrolls of varying thickness that might appear carelessly applied.

Prior research to the Cangdong Village archaeological project reveals that double happiness bowls from the specific site were likely produced in Tai Po, Hong Kong while those recovered from Market Street Chinatown were produced in Gaopizhen, located in eastern Guangdong.²⁰⁵ The decorative similarities between bowls from Cangdong Village and IKG suggests that merchants from both locations might have shared similar business networks, acquiring double happiness vessels from the same provincial kiln. However, this connection is limited to the analysis of 58 sherds identified with the double happiness decoration type at IKG, which corresponds to a MNV count of four bowls and possibly several spoons.

²⁰³ Greenwood, *Down by the Station*, 70 – 71.

²⁰⁴ Voss et al., “Archaeology of Home,” 416

²⁰⁵ Voss et al., “Archaeology of Home,” 416

Earlier archaeological work in the United States indicates that the double happiness decoration is one of the few designs with a clear temporal distribution limited to a period before 1870.²⁰⁶ This was inferred from a sharp decline in the decoration type from sites associated with activities after that period.²⁰⁷ Instead, an upward trend of bamboo decorated bowls was found at sites where double happiness decorations were expected to be found.²⁰⁸ Likewise, the Kwong Tai Wo inventories from 1871 to 1883 corroborate this claim by showing that double happiness bowls were down to 15 compared to the 1,061 bamboo decorated bowls that were available in stock.²⁰⁹ The trends that shifted between double happiness and bamboo decoration types before and after 1870 suggest that the latter likely superseded the former design. The time-sensitive distribution of double happiness bowls at IKG suggests that merchant or consumer activities were probably present before 1870, though the usage of such bowls should not be discounted after this period.



Figure 4. 6 Double happiness bowls from Cangdong Village and Market Street Chinatown, California.

From left to right: loosely painted bowl from Cangdong village (4.6a) and more finely painted bowl from Market Street Chinatown (4.6b). Courtesy of the Cangdong Village Archaeology Project and Market Street Chinatown Archaeology Project.

²⁰⁶ Sando and Felton, "Inventory Records of Ceramics," 160.

²⁰⁷ Sando and Felton, "Inventory Records of Ceramics," 160.

²⁰⁸ Sando and Felton, "Inventory Records of Ceramics," 165.

²⁰⁹ Sando and Felton, "Inventory Records of Ceramics," 155.



Figure 4. 7 Exterior of bowls with double happiness decorations from IKG.

Glaze type: blue and white				
Decoration type: Shanghai ware				
Vessel form	MNV count	MNV proportionate to total MNV of decoration type	Total sherd count	Total weight of sherds (g)
Small bowls (<10cm)	1	6.7%	17	154.5
Medium bowl (10cm - 15cm)	3	20.0%		
Large bowl (>15cm - 20cm)	1	6.7%		
Extra-large bowl (>20cm)	1	6.7%		
Bowl (unable to determine size)	1	6.7%		
Covered box	1	6.7%	2	13
Large cup (>8cm)	1	6.7%	4	29
Cup (unable to determine size)	2	13.3%		
Jar	2	13.3%	2	496.6
Jarlet	1	6.7%	3	13
Spoon	na	na	8	39
Teapot	1	6.7%	1	567
Total	15	≈100%	37	1312.1

Table 4. 7 MNV of vessel forms with Shanghai ware decorations.

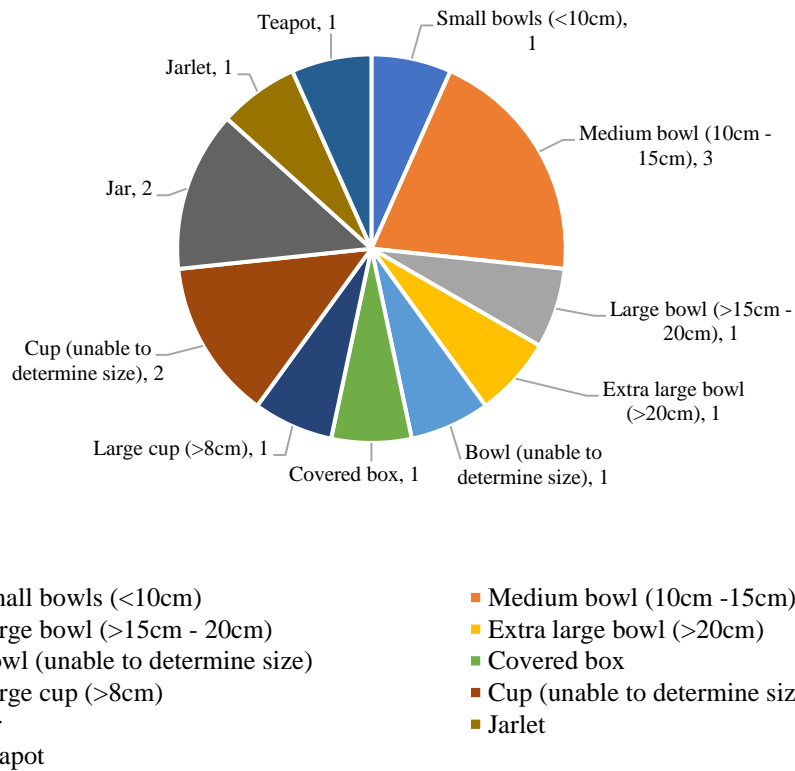


Table 4. 8 Pie chart illustrating MNV proportions of Shanghai ware vessel forms.

The Shanghai ware decoration is a blue underglaze design identified by its pinnate scrolls with thinly painted leaves regularly spaced out throughout the foliated pattern. These scrolls twine around the main motif of the design, which commonly features several blooming flowers. Three varieties of the Shanghai ware decoration were identified at IKG with reference to Jennifer Barry’s classification of similar wares from PSG. However, the names of these varieties used in this typology differ from Barry’s, specifically in referring to the type of scrolls illustrated in the decorations. The three varieties are sweet pea, sweet pea and butterflies, and brittle star.

The term "Shanghai ware" was first used in a scholarly context in William Willetts' introductory essay for the Kitchen Ch'ing catalogue. The term is mentioned as a localised name used in Malaysia and Singapore.²¹⁰ Ironically, the Shanghai ware is believed to have been

²¹⁰ Willetts, "Introduction," 13.

produced in Jingdezhen.²¹¹ Historical archaeologists in the United States either refer to this decoration as “simple flower” to reference the entry of the decoration type recorded in the Kwong Tai Wo inventories or “sweet pea” in reference to the flower that Willetts identified as a common motif that appears on this design.²¹² Wares of this sort were discovered at the ruins of a nineteenth century general store in San Francisco at the height of the Californian Gold Rush and tin mines in Malaysia, which experienced significant migration of Chinese labourers.²¹³ While the decoration type has been associated with cheaper porcelain wares used by nineteenth century Chinese migrant workers, the design was also applied to finer porcelain wares in the form of vases, jars, and basins that were historically used for aesthetic and functional domestic purposes.²¹⁴ For instance, numerous Shanghai ware bowls were retrieved from the Panglima Prang at Jalan Kuala, Singapore – a nineteenth century bungalow owned by the wealthy Straits Chinese Tan Kim Seng – before it was demolished in 1982.²¹⁵ These bowls were notable designs within the exquisite collections of Peranakan families, often used as Kitchen wares and vessels on altar tables.²¹⁶

²¹¹ Voss et al., “Archaeology of Home,” 416.

²¹² Sando and Felton, “Inventory Records of Ceramics,” 161. Sando and Felton notes that the “simple flower design” was often applied to blue and white porcelain liquor servers sold in the Californian general Store.

²¹³ Paula B. Terrey and Allen G. Pastron, “Chinese Export Porcelain in Gold Rush San Francisco,” in *The Hoff Store Site and Gold Rush Merchandise from San Francisco, California*, ed. Allen G. Pastron and Eugene M. Hattori (California: The Society for Historical Archaeology, 1990), 75; Willetts, “Introduction,” 13.

²¹⁴ Willetts, “Introduction,” 13.

²¹⁵ “Blue and white bowl with sweet pea design,” Roots, National Heritage Board, accessed May 28, 2023, <https://www.roots.gov.sg/Collection-Landing/listing/1277028>.

²¹⁶ “Sweet pea design.”

Glaze type: blue and white Decoration variety: shanghai ware - sweet pea				
Vessel form	MNV count	MNV proportionate to total MNV of variety	Total sherd count	Total weight of sherds (g)
Medium bowl (10cm - 15cm)	2	25.0%	11	101.5
Large bowl (>15cm - 20cm)	1	12.5%		
Extra-large bowl (>20cm)	1	12.5%		
Covered box	1	12.5%	2	13
Cup (too small to measure)	1	12.5%	2	11
Jar	1	12.5%	1	479
Jarlet	1	12.5%	3	13
Spoon	na	na	3	10
Total	8	100%	22	627.5

Table 4. 9 MNV of vessel forms with sweet pea decorations.

The sweet pea variety of Shanghai ware is identified with the petals of the sweet pea flower that is divided into an upper and lower section. Both sections consist of two and three petals respectively, with the lower set of petals often significantly larger than those above. Sweet pea wares recovered from PSG show that the number of petals may vary.²¹⁷ These petals have round edges and are consistent in size. The scrolls of this decorative variety exhibit pennate leaves and twined curved lines that form arches along the side profiles of the flowers.

Figure 4.8 features the vast design application of the sweet pea decoration on various types of vessel forms recovered from IKG. The *kamcheng* (Hokkien for “covered jar” or “heavy cover”) lid in 4.8a reinstates the decoration’s popularity with Peranakans since the vessel form is historically associated with Straits Chinese from Singapore and Melaka who used such jars for the storage of food and the display of social status.²¹⁸ A similar sweet pea decoration was illustrated on the interior of large bowls as shown 4.8e and 4.8f, which differs from other sweet pea vessel forms that are decorated on the exterior. Instead, these sherds exhibit a Batavian brown glaze on the exterior, indicative of their export identities. The Batavian glaze, also called

²¹⁷ Barry, *Pulau Saigon*, 60.

²¹⁸ Teddy Yong Huei Sim and Sandy Jun Chih Liu, “Studying Nonya Ceramics in the Singapore-Melaka Region and Their Larger Historical and Artistic Background,” *Journal of Chinese Overseas* 8 (2012): 274 – 275, accessed June 5, 2023, doi: 10.1163/17932548-12341239.

capuchin-brown or *café au lait* in Europe, is named after Batavia (now Jakarta, Indonesia) where most of this type of brown-glazed wares were distributed after receiving imports from China.²¹⁹ Photographs of similar sweet pea vessel forms in Willetts and Lim's catalogue show that forms with decorations on the interior are commonly found in "wash basins" though this form type is not included in this typology to avoid generalisations of function.²²⁰

The sweet pea decoration was also applied loosely as demonstrated by the altered floral motif in 4.8b, which displays only the bottom section of the sweet pea decoration, rendered in a sketched and less refined fashion. Likewise, the scrolls of the sweet pea decoration are varied in 4.8c and 4.8d with pennate leaves with rounded edges as compared to the pointier leaves in 4.8a. Such variances in the sweet pea variety suggest that the decoration was commonly copied onto wares of a poorer quality, unlike the double happiness decoration that was almost exclusively applied onto cheap medium and large bowls.

²¹⁹ D.F. Lunsingh Scheurleer, *Chinese Export Porcelain: Chine de Commande* (London: Faber and Faber Limited, 1966), 175.

²²⁰ William Willetts and Lim Suan Poh, *Nonya ware and Kitchen Ch'ing: Ceremonial and domestic pottery of the 19th – 20th centuries commonly found in Malaysia, Selangor: The Southeast Asian Ceramic Society, 1981), 71.*



Figure 4. 8 Exterior and interior of sherds with sweet pea decorations from IKG.
Top (from left to right): kamcheng lid (4.8a), small cup with sweet pea flower (4.8b), and mouth of a jarlet (4.8c). Bottom (from left to right): rim of a circular covered box (4.8d), rim of a Batavian brown bowl (4.8e), and rim of a Batavian brown bowl (4.8f).

Glaze type: blue and white				
Decoration variety: Shanghai ware – sweet pea and butterflies				
Vessel form	MNV count	MNV proportionate to total MNV of variety	Total sherd count	Total weight of sherds (g)
Small bowl (<10cm)	1	20.0%	5	36
Medium bowl (10cm -15cm)	1	20.0%		
Large cup (> 8cm)	1	20.0%	1	1
Jar	1	20.0%	1	17.6
Spoon	na	na	5	29
Teapot	1	20.0%	1	567
Total	5	100%	13	650.6

Table 4. 10 MNV of vessel forms with sweet pea and butterflies decorations.

The sweet pea and butterflies variety shares a similar configuration with the sweet pea variety, but it distinguishes itself through variations in the shape of the flowers and scrolls. Barry's examples (figure 4.9) of this variety from PSG show sweet pea motifs with

symmetrically drawn petals resembling butterflies. Another distinct difference are the scrolls that appear thicker and more stylised. These scrolls are less naturalistic compared to those in the sweet pea variety and are described as “formalised” scrolls in Barry’s preliminary typology.²²¹ While the origins of this design choice are unclear, the scrolls resemble European acanthus scrolls that appear on floral sprays used to frame decorative objects.

Examples of the sweet pea and butterflies variety at IKG are less obvious, showcasing only identifiable attributes of the decoration. For instance, the jar in 4.10b has the scrolls of the sweet pea variety but possesses the angular petal of the butterfly-like design. Likewise, the other sherds in figure 4.10 have thicker stylised scrolls similar to Barry’s examples of the sweet pea and butterflies design. Some of these sherds include the *shuangxi* character in place of the sweet pea flowers, demonstrating a combination of decorative elements.

A more complete example of this variety is showcased in the form of a teapot in figure 4.11. The sweet pea motif on this teapot has multiple curved edges though it retains the shape of a butterfly. It is also ornamented with a foliage of jagged-edge leaves, which differs from the commonly stylised scrolls.



Figure 4. 9 Examples of sweet pea and butterflies decorations from PSG.

²²¹ Barry, “*Pulau Saigon*,” 60 – 62.



Figure 4. 10 Exterior and interior of sherds with sweet pea and butterflies decorations from IKG.

Top (from left to right): spoon with shuangxi character (4.10a), jar with butterfly-like petal (4.10b), and rim of small bowl (4.10c). Bottom: spoons with shuangxi characters (4.10d and 4.10e).



Figure 4. 11 Profile of teapot with sweet pea and butterflies decoration from IKG.

Glaze type: blue and white				
Decoration variety: shanghai ware - brittle star				
Vessel form	MNV count	MNV proportionate to total MNV of variety	Total sherd count	Total weight of sherds (g)
Bowl (no rim sherds)	1	50.0%	1	17
Cup (no rim sherds)	1	50.0%	1	17
Total	2	100%	2	34

Table 4. 11 MNV of vessel forms with brittle star decorations.

The third Shanghai ware variety identified at IKG is the brittle star decoration. Unlike the previous two varieties, the brittle star decoration does not have a sweet pea motif. Instead, its motif is a stylised flower with multiple spirals at the centre and more notably, multiple elongated leaf-like shapes protruding from the flower. These pointed leaves resemble brittle stars, and thus, its name. The scrolls on the decoration consist of vines with leaves attached at the tips. These scrolls are configured to form cross patterns. Figure 4.12 illustrates examples of the brittle star decoration from PSG. Only two sherds of a similar design were identified at IKG as shown in figure 4.13. The flower with spirals and elongated leaf-like shapes, and the cross-patterned scrolls are identifiable in 4.13a and 4.13b respectively. The disparity in sherd count, vessel forms, and MNV between brittle star and the other varieties suggests that this variety of Shanghai ware might be the least popular or least available decoration in the market among the three varieties.



Figure 4. 12 Examples of brittle star decorations from PSG.



Figure 4. 13 Exterior and interior sherds with brittle star decorations from IKG.
From left to right: cup with brittle star flower (4.13a) and bowl with cross-patterned scrolls (4.13b).

Glaze type: blue and white Decoration type: chrysanthemum				
Vessel form	MNV count	MNV proportionate to total MNV of decoration type	Total sherd count	Total weight of sherds (g)
Small bowl (<10cm)	2	15.4%	75	1100.1
Medium bowl (10cm -15cm)	4	30.8%		
Large bowl (>15cm - 20cm)	2	15.4%		
Medium cup (5cm - 8cm)	1	7.7%	3	9
Large cup (> 8cm)	1	7.7%		
Covered box	1	7.7%	1	16
Jar	1	7.7%	2	38
Plate (unable to determine size)	1	7.7%	1	23
Total	13	≈100%	82	1186.1

Table 4. 12 MNV of vessel forms with chrysanthemum decorations.

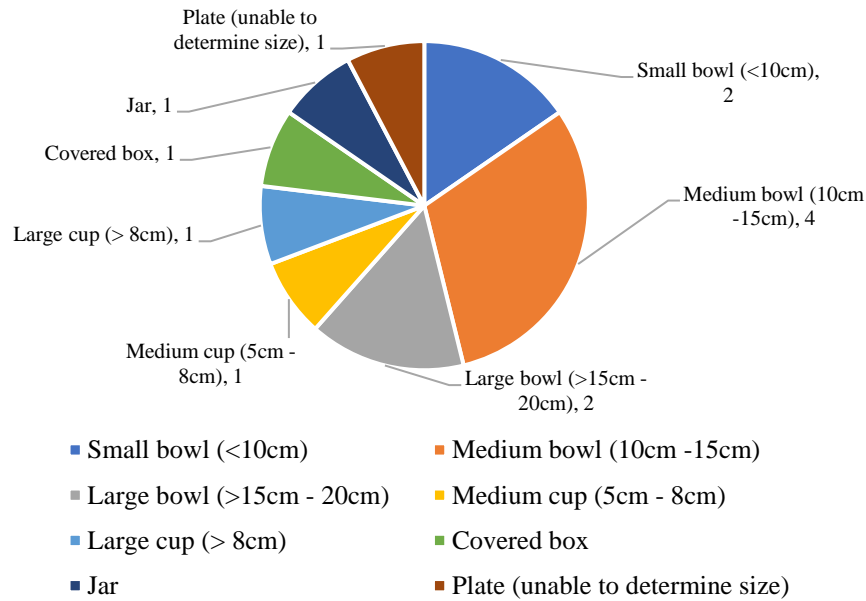


Table 4. 13 Pie chart illustrating MNV proportions of chrysanthemum vessel forms.

The chrysanthemum decoration type is a blue underglaze design consisting of chrysanthemum flower motifs and twirling scrolls. This decoration type is sometimes referred to as ‘batik’ as noted by Willetts’ and borrowed later in Barry’s documentation of such porcelain wares.²²² The term batik is used to describe the design’s frequent resemblance to “indigo-dyed batik cloth... produced by the penetration of the dye through cracks in the wax resist.”²²³ However, this typology avoids the use of the term to prevent any exclusive association with export wares, until further information about the decoration type is gathered.

Archaeologically, this decoration type has been found on porcelain soap dishes recovered from the same general store in San Francisco that sold Shanghai ware porcelain.²²⁴ Bowls with the similar Chrysanthemum and scrolls decoration are also reported to be found in Dutch colonial sites in South Africa, Candong Village, and PSG.²²⁵ Similar results are recorded

²²² Willetts, “Introduction,” 11; Barry, *Pulau Saigon*, 56 – 57.

²²³ Willetts, “Introduction,” 11 – 12.

²²⁴ Paula B. Terrey and Allen G. Pastron, “Chinese Export Porcelain,” 75.

²²⁵ Jane Klose and Carmel Schrire, “Asian Ceramic Collections from VOC Sites in the Cape,” in *Historical Archaeology in South Africa: The Material Culture of the Dutch East India Company at the Cape*, ed. Carmel Schrire, (Cape Town: Left Coast Press, 2014), 117; Voss, Kennedy, and Tan, *Transnational Lives*, 31; Barry, *Pulau Saigon*, 56 – 57.

in IKG, with the majority of the sherds suspected to have been part of a bowl as indicated in table 4.12. Two varieties are identified at IKG, which corresponds to Barry’s classification of Chrysanthemum designs recovered from PSG.

Glaze type: blue and white				
Decoration variety: chrysanthemum – chrysanthemum and flower stalks				
Vessel form	MNV count	MNV proportionate to total MNV of variety	Total sherd count	Total weight of sherds (g)
Small bowl (<10cm)	1	11.1%	66	758
Medium bowl (10cm -15cm)	3	33.3%		
Large bowl (>15cm - 20cm)	1	11.1%		
Medium cup (5cm - 8cm)	1	11.1%	3	9
Large cup (> 8cm)	1	11.1%		
Covered box	1	11.1%	1	16
Jar	1	11.1%	2	38
Total	9	≈100%	72	821

Table 4. 14 MNV of vessel forms with chrysanthemum and flower stalks decorations.

The chrysanthemum and flower stalks decoration is identified by the chrysanthemum flower motifs consisting of indistinct petals often shaped in the form of a pine cone, sporadic vegetal scrolls, and a lower section of lotus or floral panels. Unlike the distinct shape and details of the sweet pea motif the chrysanthemum motif commonly appears as a blotch of blue bleed ink. The attributes of the chrysanthemum flower can be observed in the exteriors of 4.14a and 4.14e. The chrysanthemum flower illustrated in 4.14d is an exception considering its delineated petals and gradation of blue. This variation in design is further distinguished by an uncommon vessel form found with this decoration type, a covered box, which is unique among sherds mostly identified as part of a bowl.

The scrolls in the chrysanthemum and flower stalks variety are sporadically applied. While they seem to have been inspired by the clustering of chrysanthemum leaves, Willetts

draws parallels to its resemblance of the winter prunus often depicted stylistically in porcelain decorations.²²⁶

Another identifiable trait of this variety is the lower section of the design that comprises multiple vertical lines which separates a series of indistinguishable motifs in each panel. These panels are commonly referred to as lotus or floral panels and are equidistant from one another. These panels can be observed on the exteriors of 4.14a, 4.14e, and 4.14f.



Figure 4. 14 Exterior and interior of sherds with chrysanthemum and flower stalks decorations from IKG.

Top (from left to right): base of bowl with floral panels (4.14a), base of bowl with disconnected scrolls (4.14b), and rim of bowl with floral scrolls (4.14c). Bottom (from left to right): rim of covered box with stylised chrysanthemum flower (4.14d), profile of bowls with floral panels and scrolls (4.14e and 4.14f).

²²⁶ Willetts, "Introduction," 11.

Glaze type: blue and white Decoration variety: chrysanthemum – chrysanthemum and conch shells				
Vessel form	MNV count	MNV proportionate to total MNV of variety	Total sherd count	Total weight of sherds (g)
Small bowl (<10cm)	1	25.0%	9	342.1
Medium bowl (10cm -15cm)	1	25.0%		
Large bowl (>15cm - 20cm)	1	25.0%		
Plate (no rim sherds)	1	25.0%	1	23
Total	4	100%	10	365.1

Table 4. 15 MNV of vessel forms with chrysanthemum and conch shells decorations.

The chrysanthemum and conch shells decorations have flower motifs with lanceolate petals and squiggly lines for scrolls. Such designs were found to have multiple adaptations with some scrolls seamlessly outlining the Arabic word for ‘Allah’ in the centre medallion on the sides of the central chrysanthemum motif.²²⁷ However, the presence of these calligraphic ‘Allah’ words was not identified in any of the sherds from IKG. Willetts notes that these curvilinear scrolls that appear as meaningless squiggly lines represent a phase in the descent of the conch shell design.²²⁸ While these scrolls embody the abstract representations of conch shells and possibly the imitation of a script, their springy lines and twirled patterns form the peripheral ornamentation that envelops the chrysanthemum motifs in a kind of decorative seal.

This variety of chrysanthemum decorations are less common compared to the chrysanthemum and flower stalks variety. However, both varieties tend to appear in similar forms, with bowls being the dominant form. Archaeological and collector’s records suggest that the chrysanthemum and conch shells variety was targeted at a more defined market with it appearing at multiple sites in Southeast and South Asia, and in China while not having been reported in overseas Chinese sites in the United States.²²⁹ This is supported by imitations of

²²⁷ Mme Kamer, Aga-Oglu, “Blue-and-white porcelain plates made for Moslem patrons,” in *Far East Ceramic Bulletin* 3, no. 3 (Cambridge: Far Eastern Ceramic Group, 1951), 12 – 16.

²²⁸ Willetts, “Introduction,” 4.

²²⁹ Willetts, “Introduction,” 4; see also Barry, *Pulau Saigon*, 67.

this decoration produced by the Dutch and Japanese ceramic manufacturers that were competitors of the transfer-print market in the latter half of the nineteenth century.²³⁰

The documentation of wares with this decoration does not provide specific information about their origins. However, it is certain that there were multiple kiln sites in China that produced them, given the extensive range of this decoration. Figure 4.15 shows three possible varieties of this decoration. Figure 4.15a has blotchy chrysanthemum flowers like the flower stalks variety, though its scrolls retain the curvilinear patterns of the conch shells. The porcelain is also greyer, resembling some of the sherds with double happiness decorations from IKG. Figure 4.15b – 4.15e resembles the chrysanthemum and conch shells variety recovered from PSG the most.²³¹ Figure 4.15f exhibits curvier scrolls with emboldened lines that create an appearance of inflated shapes. These stylistic variations across the sherds are not subtle. They demonstrate deliberate execution as opposed to accidental slips considering the consistency of design choice throughout respective sherds. This makes a strong case for the inference that this decoration was applied at multiple production sites in China.

²³⁰ Willetts, “Introduction,” 5.

²³¹ Barry, *Pulau Saigon*, 67. Refer to Barry’s photographs for the comparison of the sherds from IKG and PSG.



Figure 4. 15 Exterior and interior of sherds with chrysanthemum and conch shells decorations from IKG.

Top (from left to right): profile of bowl (4.15a), base of bowl (4.15b), and base of plate (4.15c). Bottom (from left to right): decorated body (4.15d and 4.15e), rim of a bowl (4.15f).

Glaze type: blue and white Decoration type: fungus				
Vessel form	MNV count	MNV proportionate to total MNV of decoration type	Total sherd count	Total weight of sherds (g)
Small bowl (<10cm)	2	28.6%	20	355.3
Medium bowl (10cm -15cm)	2	28.6%		
Large bowl (>15cm - 20cm)	1	14.3%		
Small plate (< 10cm)	1	14.3%	1	11
Medium cup (5cm - 8cm)	1	14.3%	4	87
Total	7	≈100%	25	453.3

Table 4. 16 MNV of vessel forms with fungus decorations.

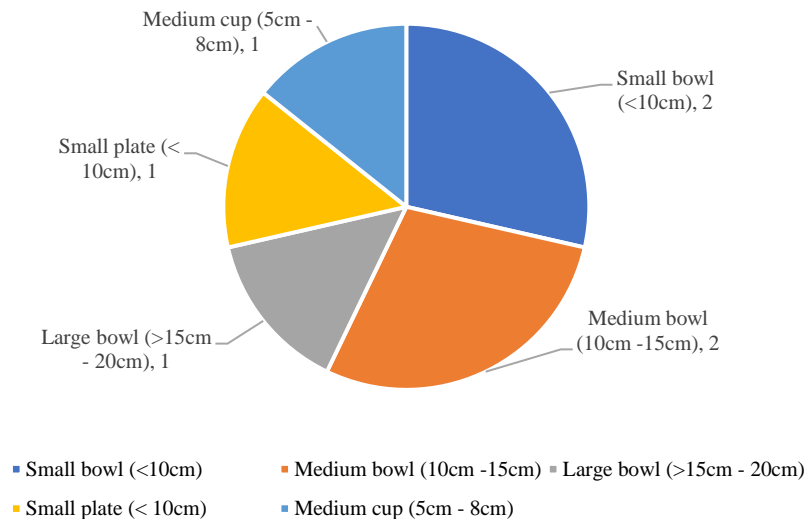


Table 4. 17 Pie chart illustrating MNV proportions of fungus vessel forms.

The fungus is the central motif that gives the decoration type its name. It is visually described as a deformed letter “J”, though differences are common in alternate varieties. Curved vertical lines often separate panels with the fungus and peach motifs. The decoration is applied onto bowls, cups, and plates at IKG.

The term fungus is sometimes referred to as *lingzhi* by collectors and archaeologists to reference the so-called “immortal fungus” that was first described in the Chinese pharmaceutical context of the *Shennong Materia Medica*.²³² While the illustration of the *lingzhi* has been stylised in Chinese art to resemble the *ruyi* sceptres and cloud collars that are common elements in Chinese iconography,²³³ the fungus motifs on porcelain are abstractions of the initial forms. The term “fungus” is used in this typology instead of “immortal fungus” or “*lingzhi*” to detach any spiritual or medicinal meanings that one might interpret from this popularised motif.

²³² Zhibin Lin, “Ganoderma (Lingzhi) in Traditional Chinese Medicine and Chinese Culture,” in *Ganoderma and Health: Biology, Chemistry, and Industry*, ed. Zhibin Lin and Baoxue Yang (Singapore: Springer Singapore, 2019), 1.

²³³ Regina Krahl, “Plant Motifs of Chinese Porcelain Examples from the Topkapi Saray Identified through Bencao Gangmu, Part II,” in *Chinese Ceramic: Selected articles from Orientations 1982 – 1998* (Hong Kong: Orientations Magazine, 1999), 163.

The fungus decoration type is a common design present in archaeological sites in Southeast Asia, Chinese overseas sites in the United States, and in China. Numerous bowls with the fungus decoration were identified in multiple kiln sites in Southern Fujian where these wares were produced.²³⁴ Chuimei Ho has also identified the fungus as a cross-district decoration that is not a specialty of any kiln site but was produced widely as a decorative staple in response to high demand for it.²³⁵ She further explains that the fungus design is an example of a persistent motif that may have remained unchanged for centuries.²³⁶

Vessel form	MNV count	MNV proportionate to total MNV of decoration variety	Total sherd count	Total weight of sherds (g)
Small bowl (<10cm)	1	20.0%	19	350.3
Medium bowl (10cm - 15cm)	2	40.0%		
Large bowl (>15cm - 20cm)	1	20.0%		
Small plate (< 10cm)	1	20.0%	1	11
Total	5	100%	20	361.3

Table 4. 18 MNV of vessel forms with fungus and peach variety.

The fungus and peach variety comprises several fungus and fruiting peach motifs separated by panels delineated by curved vertical lines. The fruiting peaches usually appear as three small blotches sprouting from multiple curvilinear lines mimicking the contours of grass and leaves. A spiral pattern is common at the centre of some bases on the interior of bowls, from which the panels radiate outward. The panels with the fungus and peach motifs exist in two configurations. The first is a single-tier decoration, and the second, a two-tier configuration. Examples from PSG show that simple dots can sometimes replace the fungus and peach motifs on the bottom tier of the two-tier configuration.²³⁷

²³⁴ Chuimei Ho, *Minnan Blue-and-white Wares: An archaeological survey of kiln sites of the 16th-19th centuries in southern Fujian, China* (Oxford: B.A.R., 1988), 28.

²³⁵ Ho, *Minnan Wares*, 28.

²³⁶ Ho, *Minnan Wares*, 111.

²³⁷ Barry, *Pulau Saigon*, 54. Refer to Barry's photographs for the dotted design on a bowl with the fungus and peach decoration.

Figure 4.16 presents a range of fungus and peach bowls. The exteriors of 4.16a and 4.16b exhibits a single-tiered configuration, while their interiors are two-tiered decorations with examples of the spiral pattern that coil from the centre of the base. 4.16c depicts another two-tier configuration on the exterior, with the motifs reduced to vegetal symbols. 4.16d displays single-tier configuration without lines that delineate motif panels. Its interior is unglazed at the base and has two brown underglaze concentric lines as the only decorative feature.



Figure 4. 16 Exterior and interior of sherds with fungus and peach decorations from IKG.

Top (from left to right): profile of bowl (4.16a) and profile of bowl (4.16b). Bottom (from left to right): profile of bowl (4.16c) and rim of bowl with brown concentric lines (4.16d).

Glaze type: blue and white				
Decoration variety: fungus - devolved fungus				
Vessel form	MNV count	MNV proportionate to total MNV of decoration variety	Total sherd count	Total weight of sherds (g)
Small bowl (<10cm)	1	50.0%	1	5
Medium cup (5cm - 8cm)	1	50.0%	4	87
Total	2	100%	5	92

Table 4. 19 MNV of vessel forms with devolved fungus variety.

The term “devolved” is adapted from Barry’s preliminary typology and re-established in this paper to encapsulate the rough sketches of the fungus motifs. This variety comprises fungus motifs reduced to multiple overlapping diagonal lines that form criss-cross patterns. Criss-cross patterns tend to either have one or two shorter lines striking through a long line in the opposite direction. The two-tier configuration is the more common decorative layout among sherds designed with this decorative variety.

The forms of this variety are commonly smaller vessels, which corresponds to the findings at PSG. While the present trend based on archaeological materials in Singapore reveals that the devolved fungus decoration is largely applied to smaller vessel forms, a larger sample size is required to strengthen this claim. There are no other reports of this fungus variety at present.



Figure 4. 17 Exterior of sherds with devolved fungus decorations from IKG.
Top (from left to right): rim of cup (4.17a) and profile of cup (4.17b). Bottom (from left to right): rim of cup (4.17c) and rim of cup (4.17d).

Glaze type: blue and white Decoration type: Sino-Sanskrit				
Vessel form	MNV count	MNV proportionate to total MNV of decoration type	Total sherd count	Total weight of sherds (g)
Medium bowl (10cm - 15cm)	1	33.3%	11	134
Large bowl (>15cm - 20cm)	1	33.3%		
Extra-large bowl (> 20cm)	1	33.3%		
Total	3	≈100%	11	134

Table 4. 20 MNV of vessel forms with Sino-Sanskrit decorations.

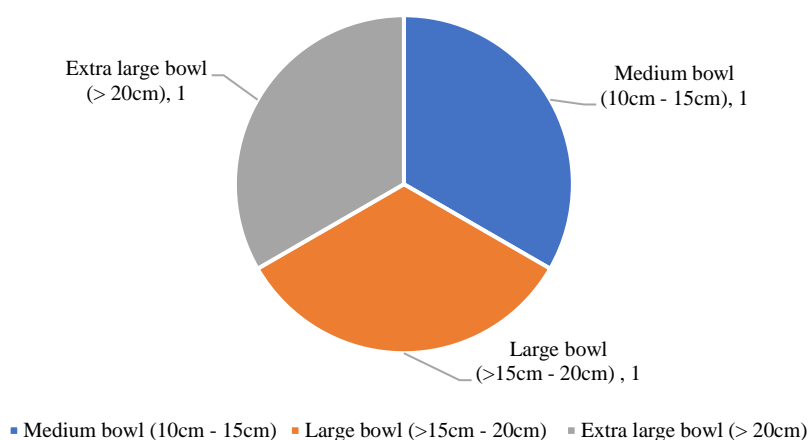


Table 4. 21 Pie chart illustrating MNV proportions of Sino-Sanskrit vessel forms.

The Sino-Sanskrit decoration commonly comprises repeating decorative symbols and, in some cases, a centre motif at the interior of the base. These decorative symbols appear to be corrupted letters of an ambiguous script representing "om," a Hindu sound-symbol that encapsulates the "divine reality"²³⁸ manifesting all of existence. The script is transliterated from Sanskrit. Scholars have debated whether the symbols were originally influenced by Tibetan or Manchu script; however, no definitive conclusions have been reached.²³⁹ Decorators often repeated and aligned the symbol to form several concentric patterns around vessels. These decorative symbols vary and usually take the form of toothbrush-shaped characters as

²³⁸ Swami Mukhyananda, *Om Gayatri and Sandh* (California: Vedanta Press, 1989), 1.

²³⁹ Ho, *Minnan Wares*, 58.

described by Willetts,²⁴⁰ or are reduced to single brushstrokes or elongated ellipses. The stylised Chinese character for longevity, *shou*, is sometimes decorated on the interior of the base as a centre medallion. However, no examples of this centre medallion were found at IKG.

The Sino-Sanskrit decoration was possibly produced as an export ware targeted at the Southeast Asian market. This decoration is not known to have been found at sites in the United States. However, sherds with this decoration have been collected in sizable quantities in Malaysia and Indonesia.²⁴¹ Likewise, numerous sherds have been identified with this decoration at multiple sites in Singapore. Large quantities of such wares have been discovered at a particular kiln site in Southern Fujian among multiple sites,²⁴² suggesting that the decoration could have been a specialised design controlled by a few producers unlike that of the popularly produced fungus decoration.

Examples of the Sino-Sanskrit decoration in figure 4.18 demonstrate two adaptations of the design. Figure 4.18a showcases the toothbrush-shaped character described by Willetts, while figures 4.18b and 4.18c display elongated ellipses resembling single vertical brushstrokes. Additionally, figure 4.18a presents one of the few block-printed decorations. Notably, all the sherds featuring this decoration were bowls. With a limited quantity of 11 sherds recovered from IKG, the Sino-Sanskrit wares might not have been as readily available or popular compared to the other decoration types found at the site.

²⁴⁰ Willetts, "Introduction," 6.

²⁴¹ Willetts, "Introduction," 6.

²⁴² Ho, *Minnan Wares*, 182.



Figure 4. 18 Exterior and interior of sherds with Sino-Sanskrit decorations from IKG.
From left to right: block-printed symbols on rim of a bowl (4.18a), single-stroke symbols on rim and base of bowls respectively (4.18b and 4.18c).

Glaze type: blue and white Decoration type: dragon				
Vessel form	MNV count	MNV proportionate to total MNV of decoration type	Total sherd count	Total weight of sherds (g)
Large bowl (>15cm - 20cm)	1	50.0%	12	277
Extra-large bowl (> 20cm)	1	50.0%		
Total	2	100%	12	277

Table 4. 22 MNV of vessel forms with dragon decorations.

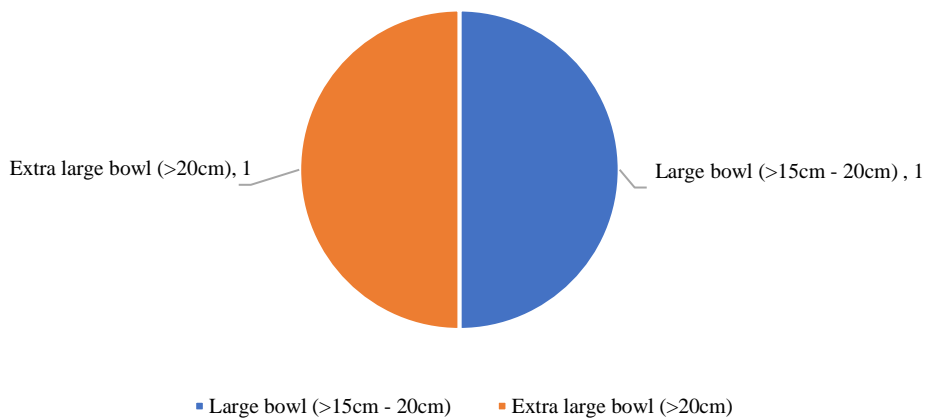


Table 4. 23 Pie chart illustrating MNV proportions of dragon vessel forms.

The dragon decoration type is a single dragon motif designed notably with scales, spinal lines, and extending claws; commonly four claws on each of the two feet. The motif frequently exhibits a cluster of indistinct curvilinear lines, ironically serving as features for the identification of the decoration. Barry believes that these motifs were block-printed,²⁴³ which explains the smudged effects on the sherds in figure 4.19. These motifs were applied to the exterior of large and extra-large bowls.

This decoration type, like the fungus, was found in large quantities in multiple kiln sites in Southern Fujian.²⁴⁴ This implies that the dragon decoration experienced a period of popularity. The variations in the dragon motifs depicted in figure 4.19 provide further support for the notion that the decoration was produced by multiple sites, particularly if they were created using block-printing techniques. This decoration was also recovered from PSG but not from Chinese overseas sites in the United States.



Figure 4. 19 Exterior of sherds with dragon decorations from IKG.

²⁴³ Barry, *Pulau Saigon*, 73.

²⁴⁴ Ho, *Minnan Wares*, 28.

Glaze type: blue and white Decoration type: rock and orchid				
Vessel form	MNV count	MNV proportionate to total MNV of decoration type	Total sherd count	Total weight of sherds (g)
Medium plate (10cm - 15cm)	1	100.0%	5	130
Total	1	100%	5	130

Table 4. 24 MNV of vessel form with rock and orchid decorations.

The rock and orchid decoration is challenging to characterise due to the presence of multiple decorative variables that are not captured by its name. Its default design layout comprises a centre plant motif sprouting out of rocks. Two other central plant motifs to the left and right of the rocks are often depicted dangling from the plant in the centre or sprouting from the ground next to it. This decoration type was inspired by a Chinese decorative scene known as the “three friends of winter,” which are the bamboo, cherry blossom (also called prunus or plum), and pine; a representation of “perseverance, steadfastness, and noble character in adversity.”²⁴⁵ While the centre motif is traditionally the bamboo plant that pierces through the rocks,²⁴⁶ versions of this theme in the nineteenth and twentieth centuries replaced the bamboo with the orchid.²⁴⁷

Figure 4.20 showcases sherds from IKG with rock and orchid decorations applied to the interiors of plates. This design is consistently applied to plates – sometimes referred to as saucer-dishes – when compared to examples from other sites. Figures 4.20a, 4.20c, and 4.20d are examples that depict the centre motif plant, which are possibly the leaves of the orchid. The rocks in Figure 4.20b look like two thick vertical lines, which the orchid or bamboo commonly pierces and sprouts out from. Blotches of foliage that resemble the scrolls from the chrysanthemum and flower stalks decoration are identifiable in Figures 4.20a, 4.20c, and 4.20d.

²⁴⁵ Ruixue Zhao, “Exploring the Origin of the Theme of “The Three Plant Friends of Winter” in Traditional Chinese Painting,” *Frontier in Art Research* 5, no. 5 (2023): 60 – 61, accessed June 13, 2023, doi: 10.25236/FAR.2023.050511.

²⁴⁶ Willetts, “Introduction,” 10.

²⁴⁷ Jones, “*Frolic Shipwreck*,” 27.

The stylised chrysanthemum motif, also called the China aster, is a common addition to this decoration type.²⁴⁸ The chrysanthemum flower is present in Figure 4.20a on the right section of the design.

The rock and orchid decoration is more uncommon than the Sino-Sanskrit sherds with only five sherds found at IKG. This decoration was also recovered from PSG. Similar wares were found in the United States and other parts of Southeast Asia. There is a suspicion that rock and orchid wares were produced in Gaopizhen based on wares produced at the site that possess similar design traits.²⁴⁹ However, no fieldwork has been conducted to confirm this.



Figure 4. 20 Interior of sherds with rock and orchid decorations from IKG.
Top (from left to right): profile of plate (4.20a), flat part of base; plate (4.20b), and base of plate (4.20c). Bottom (from left to right): base of plate (4.20d) and profile of plate (4.20e).

²⁴⁸ Jones, “*Frolic Shipwreck*,” 27.

²⁴⁹ Voss, “*Analysis of Tableware Ceramics*,” 78.

Glaze type: blue and white Decoration type: landscape				
Vessel form	MNV count	MNV proportionate to total MNV of decoration type	Total sherd count	Total weight of sherds (g)
Extra-large bowl (> 20cm)	1	50.0%	9	593
Flowerpot (no rim sherd)	1	50.0%	1	108
Total	2	100%	10	701

Table 4. 25 MNV of vessel forms with landscape decorations.

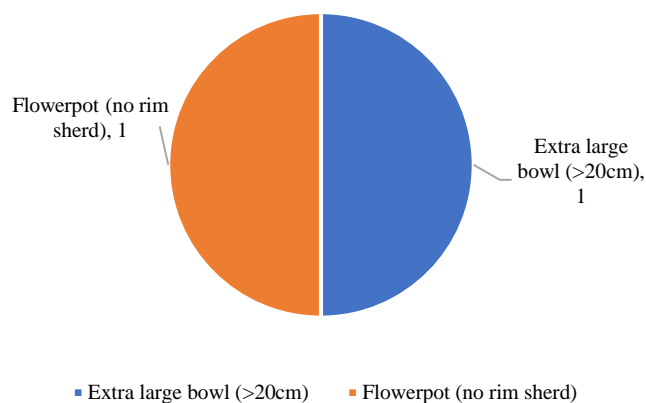


Table 4. 26 Pie chart illustrating MNV proportions of landscape vessel forms.

Landscape decorations in this typology are combined in a single category due to the wide range of design possibilities they encompass, all of which share similar thematic elements. Chinese landscape art is also known as *shanshui*, which literally means “mountain and water”.²⁵⁰ These elements are determinants of sherds categorised as a landscape type decoration. Within this category, landscape decorations can be further divided into two groups: those that depict architectural features and those that do not.

Figure 4.21 showcases examples of vessels with architectural features. Figures 4.21a and 4.21b, possibly part of the same vessel, depict a foggy mountain, trees, and a traditional Chinese house. Figures 4.21c and 4.21d are also possibly sherds of the same vessel and depict a Chinese-styled tower and a willow tree with a swastika symbol at the lower half. These

²⁵⁰ Cliff G. McMahon, “The Sign System in Chinese Landscape Paintings,” *The Journal of Aesthetic Education* 37, no. 1 (2003): 75, accessed June 20, 2023, <https://www.jstor.org/stable/3527422>.

elements are common in the willow tree decorative scene, which was also adapted and popularised in Europe with the production of transfer-printed wares in the nineteenth century. Figure 4.22 exemplifies landscape decorations without architectural features. The assortment of decorations varies widely with elements ranging from animals to other inanimate manmade objects, such as the duck and boat in Figures 4.22b and 4.22c respectively. The forms of these wares are generally larger and are uncommon findings at archaeological sites from the period in question.



Figure 4. 21 Exterior and interior of sherds with landscape decorations depicting architecture from IKG.

Top (from left to right): mountain and house: exterior (4.21a and 4.21b). Bottom (from left to right): Chinese architecture and willow tree; exterior (4.21c and 4.21d).



Figure 4. 22 Exterior and interior of sherds with landscape decorations without architecture from IKG.

Top (from left to right): mountains (4.22a) and duck on water (4.22b). Bottom (from left to right): boat on water (4.22c), plants along water (4.22d), and distant mountains (4.22e).

Glaze type: blue and white				
Decoration type: shou				
Vessel form	MNV count	MNV proportionate to total MNV of decoration type	Total sherd count	Total weight of sherds (g)
Bowl (too small to measure)	1	100.0%	1	2
Total	1	100%	1	2

Table 4. 27 MNV of vessel form with shou decoration.

The shou decoration is a simple design that consists only of the stylised *shou* Chinese character repeated several times around the vessel. The decoration has appeared only on a single blue and white porcelain sherd and has been classified as part of a bowl based on its comparatively gentle curvature, distinct from the rounder contour typically associated with cups. Similar shou motifs were identified among polychrome sherds. While the shou motif is

a common element used to decorate tableware,²⁵¹ this specific decoration type is less common among archaeological records. This decoration has been identified at Cangdong Village though in an equally small quantity.²⁵²



Figure 4. 23 Exterior of sherd with shou decoration from IKG.

Glaze type: blue and white			
Unique decorations			
Vessel form	MNV count	Total sherd count	Total weight of sherds (g)
Small bowl (<10cm)	1	16	241.1
Medium bowl (10cm - 15cm)	1		
Extra-large bowl (>20cm)	1		
Medium cup (5cm - 8cm)	1	3	126
Covered box	1	1	5
Jar (no rim sherd)	1	4	1173
Figurine	na	2	12
Spoon	na	1	7
Total	6	27	1564.1

Table 4. 28 MNV of vessel forms with unique blue and white decorations.

“Unique decorations” refers to distinct designs that are found on a limited number of sherds and possess inadequate typological documentation. The visual and descriptive documentation of these sherds establishes a precedent for future comparisons when similar

²⁵¹ Voss, “Analysis of tableware Ceramics,” 80.

²⁵² Voss, “Analysis of tableware Ceramics,” 93.

archaeological materials are recovered and identified. Decorations documented in this section possess identifiable decorative attributes.

A series of *shuangxi* related decorations were identified in figure 4.24. Sherds from 4.24a to 4.24g possibly belong to the same group of design. Aside from the recurring *shuangxi* symbols, repeated lozenge patterns with rounded edges encircle the vessel. These patterns appear like chains or interlocking lines. A concentric pattern resembling the centre of flowers in the brittle star variety is also identifiable in 4.24g. 4.24h displays a distinct decoration featuring a pair of symbols resembling the stylised *shuangxi* and *shou* symbols. A comparable decoration was identified at PSG. However, Barry erroneously described these symbols as double happiness characters.²⁵³ The execution of the decoration exhibits uneven application, resembling the inconsistencies observed in dragon decorations. This suggests the possibility that the decoration was created through block-printing rather than hand painting.

Figure 4.25 is a group of sherds with plant motifs that differ from the typical floral decorations discussed. 4.25a depicts a sketched-like illustration of a pineapple framed within the arches of two parallel lines. 4.25b is a large vessel, believed to be part of a jar or teapot, exhibits a wildflower motif with multidirectional curved lines representing grass. A repeating symbol resembling multiple calligraphed *shuangxi* characters form a concentric pattern in the interior of Figure 4.25c. The section above the pattern appears to be a cluster of overlapping flowers. Figure 4.25d portrays several circular patterns characterised by jagged edges, resembling either flower petals or the contours of the sun. These patterns contain emerging plants within them.

A cup with an unglazed groove on the lip of its rim is believed to have a lid, typical of larger teacups, also called tea bowls (figure 4.26). The cup was decorated with peaches and two stylised Chinese characters that resemble *shou*. One sherd (figure 4.27) features a sketch

²⁵³ Barry, *Pulau Saigon*, 73.

of a fish with illustrated details of an eye and scales decorated on the interior of the base. Similar fish motifs were observed at PSG, though specific decorations are not grouped into types due to their small frequencies. Figure 4.28 presents a stencil-printed *kamcheng* lid design, which was a popular decorative technique employed by the Japanese during the nineteenth century. The design features a floral pattern that incorporates numerous negative spaces used as floral contours, adding diversity to the depicted flowers. Additionally, a moulded Chinese lion, a characteristic element of *kamcheng* lids, serves as a handle. Figure 4.29 is a decoration often described as the ‘rice grain’ design due to holes made in the vessel that resemble rice grains. This design, which typically features banded diaper patterns on the rim, was widely produced in the twentieth century and is still used in Singapore in both commercial and domestic settings today.



Figure 4. 24 Exterior of sherds with shuangxi related decorations from IKG.
Top (left to right): lozenge patterns on bowls (4.24a – 4.24d). Bottom (left to right): lozenge patterns on bowls (4.24e – 4.24g) and shuangxi-shou symbols on bowl (4.24h).



Figure 4. 25 Exterior and interior of sherds with unique plant decorations from IKG.
Top (left to right): pineapple on bowl (4.25a) and wildflower on jar (4.25b). Bottom (left to right): floral cluster on bowl (4.25c) and sprouting plants on cup (4.25d).

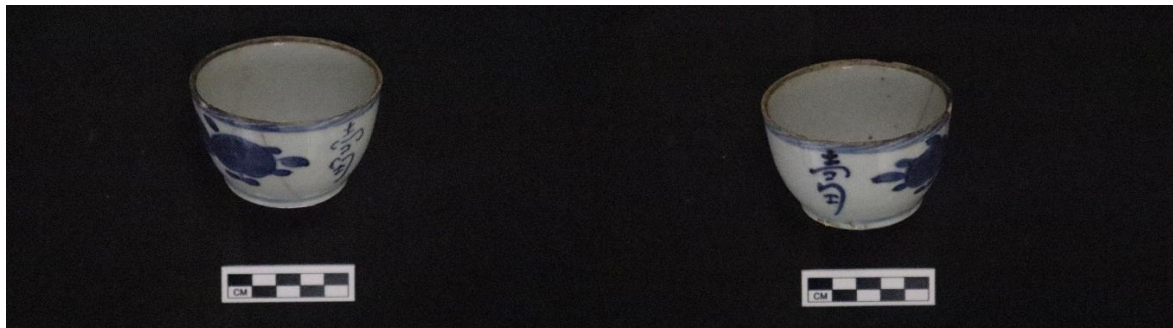


Figure 4. 26 Complete cup with shou and peach decoration from IKG.



Figure 4. 27 Interior of sherd with fish from IKG.



Figure 4. 28 Exterior of sherd with stencil-printed floral patterns from IKG.

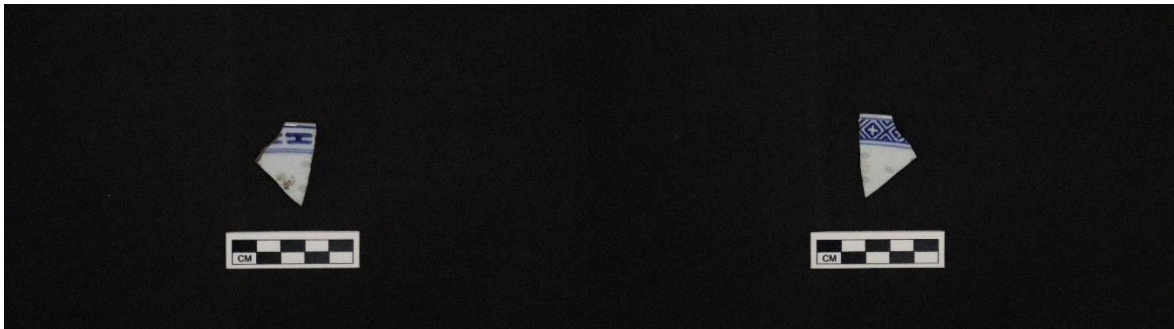


Figure 4. 29 Exterior and interior of sherd with rice grain decoration from IKG.

Polychrome decoration and form types

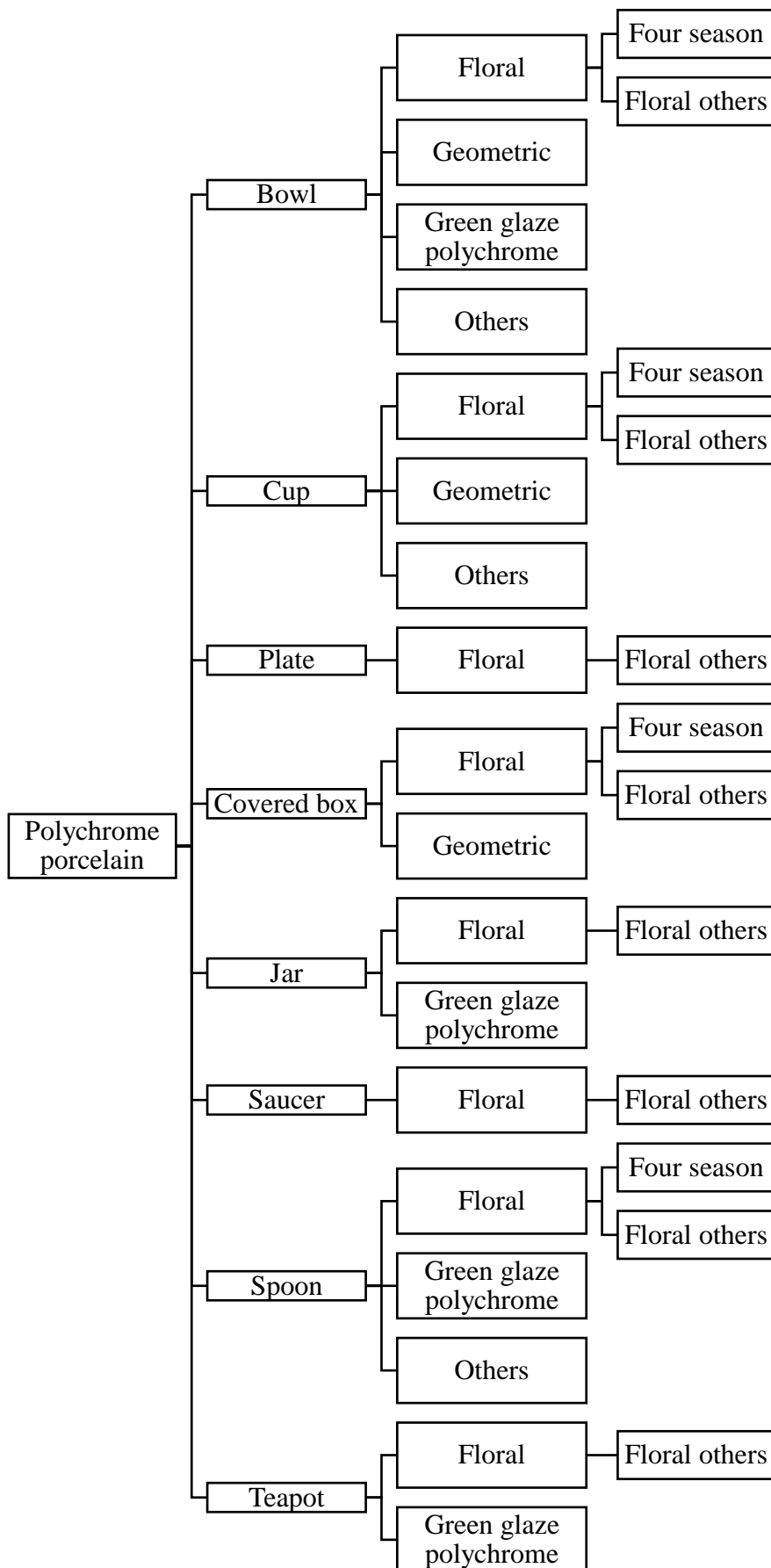


Table 4. 29
Typology
classification
chart of
polychrome
decoration and
form types.
“Others” refer
to unique
decorations.

Glaze type: polychrome Decoration type: floral				
Vessel form	MNV count	MNV proportionate to total MNV of decoration type	Total sherd count	Total weight of sherds (g)
Small bowl (<10cm)	2	10.0%	108	1506.8
Medium bowl (10cm -15cm)	4	20.0%		
Large bowl (>15cm - 20cm)	1	5.0%		
Extra-large bowl (>20cm)	1	5.0%		
Small cup (<5cm)	1	5.0%	33	204.7
Medium cup (5cm - 8cm)	3	15.0%		
Large cup (> 8cm)	1	5.0%		
Medium plate (10cm - 15cm)	1	5.0%	1	8
Covered box	2	10.0%	10	157
Jar	1	5.0%	6	79
Saucer	1	5.0%	6	39
Spoon	na	na	15	94.2
Teapot	2	10.0%	4	734
Total	20	100%	183	2822.7

Table 4. 30 MNV of vessel forms with floral decorations.

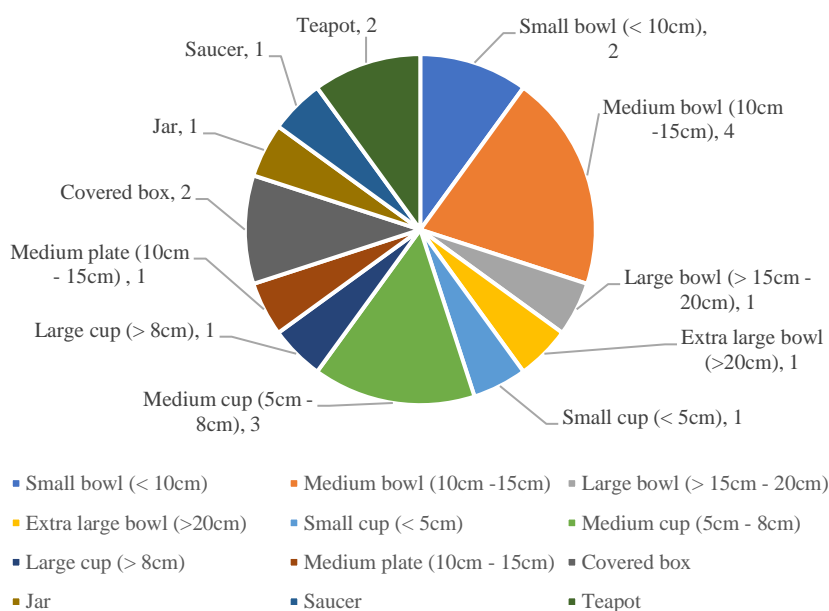


Table 4. 31 Pie chart illustrating MNV proportions of floral vessel forms.

Floral-themed decorations are common designs on polychrome porcelain. These decorations demonstrate a broader range of decorative techniques compared to the predominantly hand-painted underglaze decorations found in blue and white designs. Hence, the floral decoration type is a generic group that does not refer to a specific design configuration or motif. Floral decorations are found on a wide range of vessel forms, with bowls constituting a significant proportion (40%) of the total MNV, followed by cups (25%). Among bowl forms, medium-sized bowls and cups are the most prevalent sizes within their respective categories.

Glaze type: polychrome				
Decoration variety: floral – floral others				
Vessel form	MNV count	MNV proportionate to total MNV of decoration type	Total sherd count	Total weight of sherds (g)
Small bowl (< 10cm)	2	11.8%	97	1334.6
Medium bowl (10cm -15cm)	3	17.6%		
Large bowl (> 15cm - 20cm)	1	5.9%		
Extra-large bowl (>20cm)	1	5.9%		
Small cup (< 5cm)	1	5.9%	29	182.5
Medium cup (5cm - 8cm)	2	11.8%		
Large cup (> 8cm)	1	5.9%		
Medium plate (10cm - 15cm)	1	5.9%	1	8
Covered box	1	5.9%	5	23
Jar	1	5.9%	6	79
Saucer	1	5.9%	6	39
Spoon	na	na	9	59.2
Teapot	2	11.8%	4	734
Total	17	≈100%	157	2459.3

Table 4. 32 MNV of vessel forms with other floral decorations.

The term “floral others” refers to generic floral polychrome varieties applied to a white background other than the four seasons decoration that will be discussed in the later section. Floral motifs in these decorations demonstrate significant variation and are found in limited quantities. It is observed that specific floral polychrome decorations are less likely to recur

across multiple vessels compared to blue and white decorations. This suggests that these generic floral porcelain designs were either sold or purchased in smaller quantities compared to their blue and white counterparts.

The most common type of floral decorations at IKG are overglaze floral designs that often appear sporadically decorated with no clear and consistent pattern. This differs from blue and white decorations that often feature equidistant motifs framed by scrolls or panels. Figure 4.30 showcases some of these examples with most of the sherds exhibiting significant proportions of negative spaces. Some of these sherds also display unusual decorative applications, such as a combination of overglaze and underglaze elements in 4.30c, 4.30d, and 4.30f, and overlapping green and red overglazes in 4.30I. Figure 4.31, on the other hand, demonstrates clearer decorative patterns. Examples of floral scrolls in the form of flower stalks and foliage are identifiable in Figures 4.31a, 4.31d, and 4.31e. Floral clusters with defined petals are also distinct in Figures 4.31b, 4.31c, and 4.31f. Similarly, these decorative floral clusters were applied to larger vessels, such as teapots as illustrated in figure 4.32. These teapot sherds resemble the Nonya export wares that were quintessential household objects in the homes of wealthy Straits Chinese due to their vivid enamel colours.²⁵⁴

Floral decorations were also produced in more abstract designs that placed more emphasis on stylised floral shapes rather than motifs of actual flowers. Figure 4.33 illustrates a series of sherds with red overglaze floral patterns that resemble hand fans, seashells, and mushrooms. These patterns are usually accompanied with smaller details, such as flower petals, that are mostly faded due to deterioration. The difference in the rate of deterioration suggests that some of these floral patterns had thinner layers of enamel compared to the red decorative sections that remain intact. Figure 4.34 demonstrates another example that features an intact

²⁵⁴ Lim Suan Poh, "Nonya ware," in *Nonya Ware and Kitchen Ch'ing: Ceremonial and domestic pottery of the 19th – 20th centuries commonly found in Malaysia*, ed. William Willetts and Lim Suan Poh (Selangor: The Southeast Asian Ceramic Society, 1981), 17.

European inspired blue floral scroll that resembles the acanthus scrolls commonly found on European porcelain decorations. The faded pink and yellow floral details suggest that these layers were thinner, and originally more subtle decorative elements compared to the blue enamelled feature.

Underglaze floral-themed decorations are less common compared to overglaze designs. These underglaze decorations tend to feature a wider range of floral elements that do not necessarily appear as the primary motif of the decoration. Figure 4.35 demonstrates the wide application of underglaze floral elements. Two Batavia brown sherds (4.35b and 4.35c) were found to have small white sections with flower stalks. The floral motifs on these sherds are often less significant with most of its decoration consisting of brown engobe. On the other hand, 4.35a, 4.35d, and 4.35f features central floral motifs that comprise a hand painted pink flower with green leaves accompanied with blue concentric lines. Both the pink flower and Batavia brown decorations were also recovered at Cangdong Village.²⁵⁵ Figure 4.36 showcases a series of floral polychrome decorations that are configured like the pink flower decoration in Figure 4.35a. However, these decorations are solely designed with green underglaze.

The sherds in figure 4.37 were decorated with transfer-printed polychrome designs. Their decorations exhibit simpler floral motifs and patterns concentrated on specific parts of vessels. Two green stamped marks with the words “MADE IN CHINA” in both English and Chinese were identified on the bottom side of two sherds. While these marks are almost identical, their generic textual information pointing to the country of origin poses the possibility that different manufacturers were using the same maker’s stamp. One potential explanation for this scenario is that during the Great Depression, China-made products were classified as "national products" by the Chinese Government, and a tariff system was implemented to protect

²⁵⁵ Voss, “Analysis of Tableware Ceramics,” 83. See figure 5.7 for examples; Voss notes that the Batavia brown is also known as “Capuchin Ware” or “Tzu Chin”.

them.²⁵⁶ This system aimed to regulate imports into China, preventing foreign products from directly competing with goods manufactured by Chinese producers. This line of reasoning could also explain the emergence of transfer-printed porcelain wares produced in twentieth-century China, which was a decorative technique primarily used in Europe and Japan in the nineteenth century.



Figure 4. 30 Exterior and interior of sherds with sporadic floral overglaze decorations from IKG.

Top (from left to right): dotted band and pink flowers on bowl (4.30a and 4.30b), faded red floral design on saucer with scalloped lip (4.30c), red floral scrolls on bowl (4.30d), and green willow tree leaves and yellow flower stalk on bowl (4.30e). Bottom (from left to right): faded green flower with blue floral underglaze on plate (4.30f), small red flowers on spoon (4.30g), red and green floral pattern (4.30h), green foliage and red flower on bowl (4.30I), and yellow flower stalk on bowl (4.30J).

²⁵⁶ Huei-Ying Kuo, "Rescuing Businesses through Transnationalism: Embedded Chinese Enterprise and Nationalist Activities in Singapore in the 1930s Great Depression," *Enterprise & Society* 7, No. 1 (2006): 118, accessed June 25, 2023, <https://www.jstor.org/stable/23700740>.



Figure 4. 31 Exterior and interior of sherds with patterned floral overglaze decorations from IKG.

Top (left to right): green and pink flowers on shoulder of teapot (4.31a), faded enamel flowering plant on bowl (4.31b), and red chrysanthemum flowers with green leaves on bowl (4.31c). Bottom (left to right): red flowers on spoon (4.31d), red flowers with black foliage on spoon (4.31e), and red and yellow flowers with green leaves on cup (4.31f).



Figure 4. 32 Teapots with floral decorations from IKG.

From left to right: Nonya-like decoration (4.32a) and pineapples and peaches (4.32b).



Figure 4. 33 Exterior and interior of sherds with red floral overglaze decorations from IKG.



Figure 4. 34 Plate with European floral overglaze decoration from IKG.



Figure 4. 35 Exterior and interior of sherds with floral underglaze decorations from IKG.

Top (left to right): a stalk of pink chrysanthemums on bowl (4.35a), Batavia brown with green stalk on bowl (4.35b), Batavia brown with green foliage on bowl (4.35c), and pink flower and green leaves on covered box lid (4.35d). Bottom (from left to right): red flower, and blue circle with gold chrysanthemum on bowl (4.35e), green dotted band with pink petals (4.35f), and green and pink floral decoration on saucer (4.35g).



Figure 4. 36 Bowls with green floral underglaze decorations from IKG.



Figure 4. 37 Exterior and interior of sherds with transfer printed floral decorations from IKG.

Glaze type: polychrome Decoration variety: floral - four seasons				
Vessel form	MNV count	MNV proportionate to total MNV of decoration type	Total sherd count	Total weight of sherds (g)
Medium bowl (10cm - 15cm)	1	33.3%	11	172.2
Medium cup (5cm - 8cm)	1	33.3%	4	22.2
Covered box	1	33.3%	5	134
Spoon	na	na	6	35
Total	4	≈100%	26	363.4

Table 4. 33 MNV of vessel forms with four seasons decorations.

The four seasons decoration, also referred to as ‘four flowers’, is the only non-generic variety within the floral polychrome decoration type. Its overglaze design comprises four flowers, with each flower representing one of the four seasons: “peony for spring; lotus for summer; chrysanthemum for autumn; and plum blossom for winter.”²⁵⁷ These flowers are evenly distributed at the four cardinal points of the vessel, creating a symmetrical arrangement.

The term ‘four flowers’ is directly translated from an entry in the Kwong Tai Wo inventories, that referred to this decoration as *si hua* (四花) in Chinese.²⁵⁸ Archaeologists commonly refer to the decoration as ‘four seasons’ to provide context for the identification of flower motifs. The four seasons variety is one of the most prevalent floral polychrome decorations recovered from Chinese overseas sites in the United States. At Market Street Chinatown alone, 1,772 sherds were recovered from the site, which is more than 40% of the total Chinese tableware sherds collected from the area.²⁵⁹ These wares were also recovered from PSG, though in smaller quantities.²⁶⁰ While Barry did not adopt the term ‘four seasons’, she claims that these finer polychrome wares – with reference to photographs – were produced

²⁵⁷ Siliang Kang, “Symbolic Meanings of Chinese Porcelains from the Market Street Chinatown,” manuscript, Market Street Chinatown Archaeology Project, accessed March 12, 2023, <http://marketstreet.stanford.edu/wp-content/uploads/2013/08/Kang-2013.pdf>.

²⁵⁸ Sando and Felton, “Inventory Records of Ceramics,” 157.

²⁵⁹ Voss et al., “Archaeology of Home,” 417.

²⁶⁰ Barry, *Pulau Saigon*, 78.

in Jingdezhen.²⁶¹ Choy corroborates Barry's claims based on his study at the kiln site in Jingdezhen.²⁶²

The four seasons decorations have been found in a sizable variety of vessel forms at overseas Chinese sites, including some more uncommon forms such as wine bowls, condiment dishes, and plates.²⁶³ The forms (figure 4.38) recovered from IKG are less varied and remain relatively consistent with the usual findings of bowls and cups at the site. Figure 4.38b is an exception, featuring an uncommon lid of a circular covered box that had not been reported elsewhere with the four seasons decoration. This sherd is identified as part of a covered box rather than a tea bowl based on the presence of a flange located at the lip of the sherd. The flange is a common feature that facilitates the enclosure of lids over the grooved rims of covered boxes.



Figure 4. 38 Exterior and interior of sherds with four seasons decorations from IKG.
Top (from left to right): base of a bowl (4.38a) and lid of a covered box with handle (4.38b). Bottom (from left to right): base of a bowl (4.38c) and bowl of a spoon (4.38d).

²⁶¹ Barry, *Pulau Saigon*, 28.

²⁶² Choy, "Interpreting "Overseas Chinese" Ceramics, 6.

²⁶³ Greenwood, *Down by the Station*, 70.

Glaze type: polychrome Decoration type: geometric				
Vessel form	MNV count	MNV proportionate to total MNV of decoration type	Total sherd count	Total weight of sherds (g)
Small bowl (<10cm)	1	12.5%	20	266.6
Medium bowl (10cm - 15cm)	1	12.5%		
Large bowl (>15cm - 20cm)	1	12.5%		
Small cup (<5cm)	3	37.5%	7	37.7
Medium cup (5cm - 8cm)	1	12.5%		
Covered box	1	12.5%	1	20
Total	8	100%	28	324.3

Table 4. 34 MNV of vessel forms with geometric decorations.

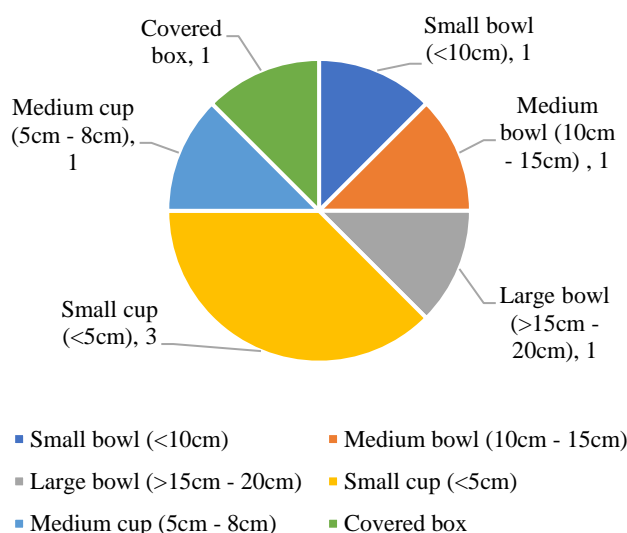


Table 4. 35 Pie chart illustrating MNV proportions of geometric polychrome vessel forms.

Geometric decorations consisting of shapes and linear patterns are also commonly found on polychrome porcelains with white backgrounds. Floral motifs are usually absent from these designs. Geometric polychrome sherds are less significant compared to sherds with floral decorations at IKG. This decoration type has less variety and mostly occurs on bowls and cups, except for one covered box sherd.

Circles and linear patterns are recurring decorative elements in geometric polychrome porcelains. Some of these sherds recovered from IKG have blue and red circles with green lines that form various types of lattice patterns (figure 4.39). Similar circular overglaze patterns were

recovered from PSG. Barry believes that these wares were polychrome porcelains from Fujian and notes their resemblance to ceramics known as “Swatow” wares from the Victoria and Albert Museum, London.²⁶⁴ Similar linear patterns were also incorporated into bands encircling the rims of vessels. Figure 4.40 exemplifies this pattern with sherds that have red lattice patterns enclosed between two concentric lines. These geometric patterns often occur on smaller vessel sizes and do not depict elaborate motifs like those identified on overglaze floral decorations.

Underglaze geometric decorations on the other hand occur more frequently on larger vessels displaying more elaborate designs. Figure 4.41 for instance illustrates two sherds decorated with shapes and linear patterns. Figure 4.41a features multiple shapes defined by white negative spaces between sections of blue underglazes. These shapes include multiple concentric circles, spiralling squares, and circular shapes with lines branching out from a fixed centre point. Figure 4.41b features another red lattice pattern applied to an illustrated fish to mimic the patterns of its scales. The fins of the fish are elongated ellipses extending out from the red grid. The small quantity and limited variety of these geometric decorations indicate that such porcelains were uncommon either in production, sales, or consumption specific to IKG.



Figure 4.39 Exterior of sherds with circular overglaze decorations from IKG.

²⁶⁴ Barry, *Pulau Saigon*, 79 – 80.



Figure 4. 40 Exterior and interior of sherds with red overglaze linear decorations from IKG.



Figure 4. 41 Exterior and interior of sherds with underglaze geometric decorations from IKG.

From left to right: blue and brown underglaze on bowl (4.41a) and red and blue underglaze on bowl (4.41b).

Glaze type: polychrome Decoration type: green glaze polychrome				
Vessel form	MNV count	MNV proportionate to total MNV of decoration type	Total sherd count	Total weight of sherds (g)
Small bowl (<10cm)	1	14.3%	6	112
Medium bowl (10cm - 15cm)	1	14.3%		
Large bowl (>15cm - 20cm)	1	14.3%		
Extra-large bowl (>20cm)	1	14.3%		
Spoon	na	na	1	3
Teapot	2	28.6%	3	471
Total	7	≈100%	10	586

Table 4. 36 MNV of vessel forms with green glaze polychrome decorations.

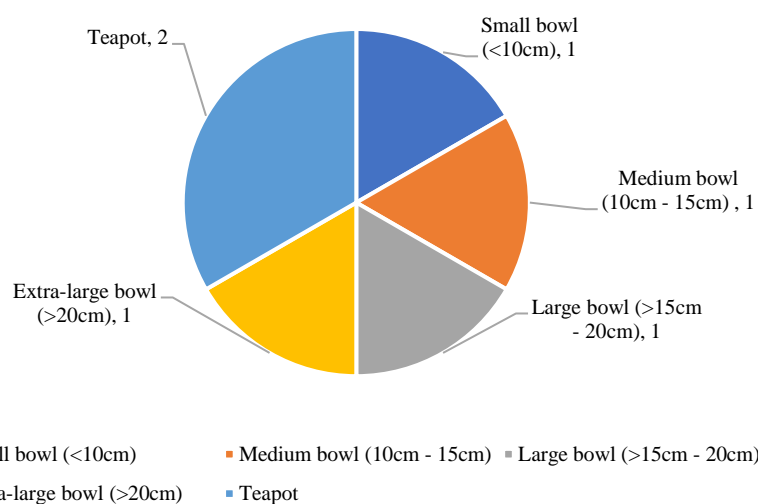


Table 4. 37 Pie chart illustrating MNV proportions of green glaze polychrome vessel forms.

The green glaze polychrome decoration refers to polychrome porcelains with a green glazed backdrop. Its glaze colour resembles the shade of winter green glaze instead of the typical clear glaze that accentuates the white background of the porcelain body. Green glaze polychromes often incorporate plant motifs with minimum to no additional patterns such as repeated shapes and scrolls. These motifs commonly occur in overglazes.

Figure 4.42 presents several examples of green glaze polychromes with three varieties of decorations. Figure 4.42a displays dynamically illustrated leaves on the interior of the rim and the exterior of the body. The quick unidirectional brushstrokes evoke a sense of dynamism in the decoration. Figure 4.42b is part of a spoon that features a single green and pink overglaze leaf and petal respectively. This style of enamel decoration bears resemblance to the techniques employed in floral polychrome porcelains. Figures 4.42c and 4.42d are the only green glaze polychrome sherds with underglaze decorations. These sherds appear to have blue feather-like brushstrokes near the rims, which is an uncommon outcome of hand painted decorations. The teapot in figure 4.43, like 4.42a, exhibits dynamic brushstrokes indicated by the different intensities of thickness and colour on the green leaves. Pink overglazes were also painted over white overglazes to emulate the soft and realistic appearance of the plum blossoms suspended from a tree. The lack of a stem in the middle section of the design also adds a sense of depth, with the floating leaves and flowers positioned prominently at the foreground. Hints of gold coloured enamel can also be found on the surface of the teapot, though not apparent in the photograph. In a similar fashion, the teapot in figure 4.44a features a closeup illustration of the plum blossom. The leaves in this decoration are more consistently painted with standardised sizes and distinct shapes. Likewise, the leaves painted in green overglaze in figures 4.44b and 4.44c demonstrate distinct outlines of plants.

The provenance of these green glaze polychromes is still in contention despite their identification as Chinese porcelain sherds at IKG. Some green glaze polychrome sherds with overglaze enamelling in the United States were found to have similar chemical compositions as other green glazed wares identified as Japanese porcelain.²⁶⁵ China introduced green glaze porcelain to the Japanese during the Song period.²⁶⁶ These were known as *Seiji* or Japanese

²⁶⁵ Stenger, "Sourcing and Dating," 327.

²⁶⁶ Hazel Gorham, *Japanese and Oriental Ceramics* (Rutland: VT: Charles E. Tuttle Company, 1971), 85 -87.

“celadon”, which were later produced substantially with polychrome floral decorations from the seventeenth century as export wares.²⁶⁷ Leland Bibb, a collector of Chinese and Japanese ceramics in the United States, has also reported that Japanese green glaze polychromes were found with “flowers, branches, leaves, and gilt highlights painted over the glaze.”²⁶⁸ This description fits the decorative motifs in figure 4.43 and 4.44a and should be reconsidered with further additional field findings to support the identification of Japanese green glaze polychromes.



Figure 4. 42 Exterior and interior of sherds with green glaze polychrome decorations from IKG.

From left to right: green and brown overglazes on bowl (4.42a), green and pink overglazes on spoon (4.42b), and blue underglazes on bowl (4.42c and 4.42d).

²⁶⁷ Douglas Edward Ross, “Material Life and Socio-cultural Transformation among Asian Transmigrants at the Fraser River Salmon Cannery,” (PhD Thesis, Simon Fraser University, 2009), 189 – 190.

²⁶⁸ Leland E. Bibb, “Japanese Celadon with Floral Motifs” (unpublished manuscript, February 27, 2012), 2.



Figure 4. 43 Plum blossom overglaze decoration on teapot from IKG.



Figure 4. 44 Sherds with plum blossom and other overglaze decorations from IKG.
From left to right: green, pink, and white overglazes on teapot (4.44a) and green overglaze on bowl (4.44b and 4.44c).

Glaze type: polychrome Unique decorations			
Vessel form	MNV count	Total sherd count	Total weight of sherds (g)
Medium bowl (10cm - 15cm)	1	8	920.9
Large bowl (>15cm - 20cm)	1		
Extra-large bowl (>20cm)	1		
Medium cup (5cm - 8cm)	1	9	62.2
Spoon	na	1	5
Total	4	18	988.1

Table 4. 38 MNV of vessel forms with unique polychrome decorations.

Several polychrome sherds without floral decorations, geometric patterns, or were identified as outliers were categorised as unique decorations. Figure 4.45 exhibits a series of sherds with *shou* symbols. These symbols, which were typically produced in blue and white underglaze, were found in a substantial quantity in various polychrome colours such as yellow, red, and green. Majority of the sherds were decorated with overglaze except one that was decorated with red underglaze. Polychrome *shou* decorations were not found in Market Street or Cangdong village.

Another unusual decoration is a meticulously designed green dragon in figure 4.46. The overglaze dragon was decorated with a green gradient to emulate the texture of scales. Its body and spine were outlined with black enamel. The dragon on this sherd differs stylistically from the block-printed dragons decorated onto blue and white porcelain bowls. Though dragons were common motifs on porcelains in the nineteenth and twentieth centuries, no other visual record resembles the dragon depicted on this polychrome sherd. Only one sherd with such a design was recovered from IKG.

Chinese imitations of Japanese decorations were also identified at IKG. The decoration featured on the sherds in figure 4.47 are known as Imari designs, which are characterised by their blue underglaze, iron-red and gold overglazes.²⁶⁹ The sherds from IKG showcase similar

²⁶⁹ Scheurleer, *Chinese Export Porcelain*, 165.

decorative attributes with symmetrical symbols and floral motifs decorated with blue underglaze and iron-red overglaze respectively. The term "Imari" is derived from the port of Arita in Japan and eventually adapted by Japanese and Europeans to refer to the porcelain wares that were exported from the area.²⁷⁰ Imari wares, which were highly sought after by the Dutch in the eighteenth century, were originally copied by Chinese potters at Jingdezhen to meet the demands of traders at a lower price.²⁷¹ While the imitations in figure 4.48 might not have been manufactured in Jingdezhen, they demonstrate the continuation of decorations long after the fulfilment of their original purpose to intersect and compete for in the Dutch market.



Figure 4. 45 Exterior and interior of sherds with shou polychrome decorations from IKG.

All sherds were decorated with overglaze except the underglaze sherd on the bottom row, second from the right.

²⁷⁰ Ross, "Material Life," 148.

²⁷¹ Scheurleer, *Chinese Export Porcelain*, 165.



Figure 4. 46 Exterior of sherd with overglaze dragon decoration from IKG.



Figure 4. 47 Exterior of sherds with overglaze Chinese Imari imitations from IKG.

Winter green decoration and form types

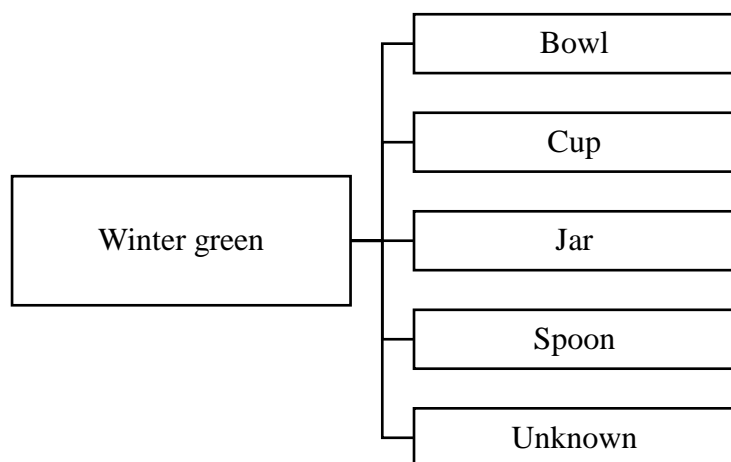


Table 4. 39 Typology classification chart of winter green form types.

Glaze type: winter green				
Undecorated				
Vessel form	MNV count	MNV proportionate to total MNV of glaze type	Total sherd count	Total weight of sherds (g)
Small bowl (<10cm)	1	12.5%	49	763
Medium bowl (10cm - 15cm)	4	50.0%		
Large bowl (>15cm - 20cm)	1	12.5%		
Small cup (<5cm)	1	12.5%	3	21
Medium cup (5cm - 8cm)	1	12.5%		
Spoon	na	na	1	15
Unknown	na	na	7	21.35
Total	8	100%	60	820.35

Table 4. 40 MNV of vessel forms with winter green glaze.

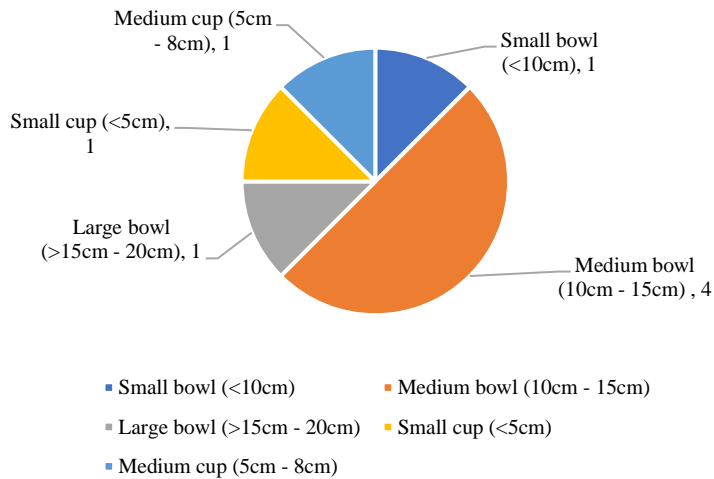


Table 4. 41 Pie chart illustrating MNV proportions of winter green vessel forms.

One criterion for winter green porcelain is the absence of decorations, including additional underglaze, overglaze, and any alterations made to the surface of the porcelain, such as impressed or moulded marks. This requirement of identifying winter green wares is standardised across other archaeological sites overseas. Hence, a sherd with a similar glaze type to the winter green glaze, found with impressed or moulded marks, is considered a monochrome sherd in this study.

Figure 4.48 exhibits several winter green sherds from IKG. Despite the apparent absence of decoration on winter green wares, some sherds have been found with brown lips on the rims of bowls. It is uncertain if these brown lips were deliberately applied to bowls or if they were resulted from chemical reactions during firing. Another less common occurrence is the white lips of rims that occur on sherds with brighter winter green glazes. While these sherds could have been part of porcelains not produced in Jingdezhen, it is also possible that winter green varieties historically existed at the kiln site. Another possible explanation is the potential mix of Japanese green glaze sherds among the Jingdezhen produced winter green sherds. Japanese “celadons” have been characterised by Stenger to often possess a “pale blue-green

colour, with white interiors.”²⁷² While this description fits some of the winter green sherds recovered from IKG, their colours also resemble many of the sherds that were identified as Jingdezhen winter green porcelain found at other sites.

Most winter green forms from IKG consist of bowls and cups in various sizes. The most common form is the medium-size bowl. These forms correspond to winter green entries from the Kwong Tai Wo inventories, which documented an inventory of 1,188 vessels that consisted of bowls, teacups, and liquor cups.



Figure 4. 48 Exterior and interior of sherds with winter green glaze from IKG.

²⁷² Stenger, “Sourcing and Dating,” 327.

Monochrome decoration and form types

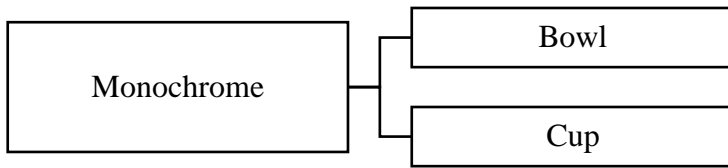


Table 4. 42 Typology classification chart of winter green form types.

Glaze type: monochrome				
No specific decoration				
Vessel form	MNV count	MNV proportionate to total MNV of glaze type	Total sherd count	Total weight of sherds (g)
Medium bowl (10cm - 15cm)	1	25.0%	11	64.1
Large bowl (>15cm - 20cm)	1	25.0%		
Medium cup (5cm - 8cm)	1	25.0%	3	41
Large cup (>8cm)	1	25.0%		
Total	4	100%	14	105.1

Table 4. 43 MNV of vessel forms with monochrome glaze.

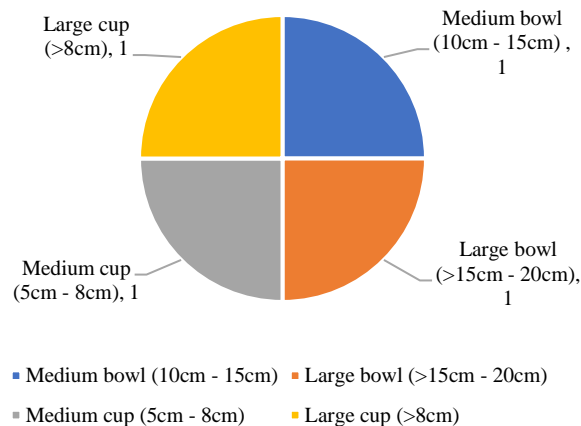


Table 4. 44 Pie chart illustrating MNV proportions of monochrome vessel forms.

Monochrome porcelain wares do not have specific decoration types. These sherds are identified by single glaze colours and are only decorated with impressed and moulded designs. Figure 4.49 exhibits a variety of decorative elements. Figure 4.49a is a sherd with an unusual pink glaze. The words “MADE IN CHINA” were embossed on the exterior of the sherd and indented with a circle. While the flatness of the sherd resembles the base of a plate, the circular

indent is small and might be an indication of a bowl's gradual curvature. Three sherds (Figures 4.49b – 4.49d) glazed in green resemble the winter green glaze though there are notable differences. The green glaze on figure 4.49b is too dark, while the glazes on figures 4.49c and 4.49d are too pale. The three sherds also possess decorative marks and forms uncharacteristic of winter green porcelain. Figure 4.49b is part of a cup with a flat base. The exterior of its base shows no sign of a foot rim, which is present on winter green cups. The sherd was also decorated with a horizontal ridge on the exterior. Figure 4.49c has a patchy bluish green glaze with a foliated lip shaped to mimic the contours of a leaf or a flower. A vertical line was also impressed onto the surface of the exterior and interior of the sherd, which was possibly part of a decorative panel. Figure 4.49d similarly has a dull green glaze that is different from the winter green glaze. The sherd is decorated with a scalloped lip and multiple indistinguishable incised shapes on the interior.

Monochrome porcelain sherds prove to be uncommon at IKG with only 14 sherds identified. Majority of sherds were glazed in various shades of green. Green monochrome wares with moulded decorations were also found at PSG, though those wares were much larger and elaborate compared to the sherds illustrated in figure 4.49.²⁷³ No known similarities of monochrome wares were found at other archaeological sites.

²⁷³ Barry, *Pulau Saigon*, 87.



Figure 4. 49 Exterior and interior of sherds with monochrome glazes from IKG.
Top (from left to right): pink glaze with embossed exterior (4.49a) and moulded ridge (4.49b). Bottom (from left to right): foliated lip (4.49c) and scalloped lip with incised decoration (4.49d).

White decoration and form types

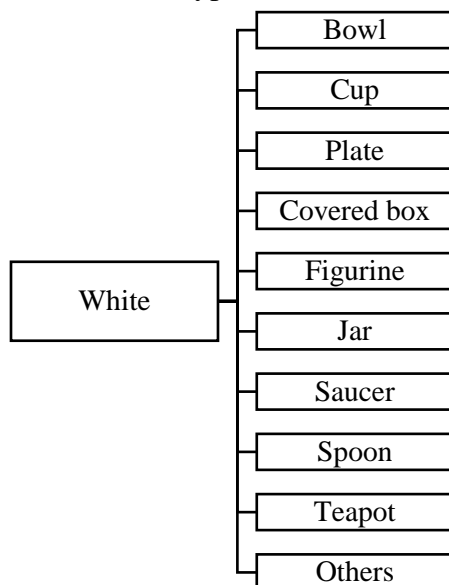


Table 4. 45 Typology classification chart of white form types.

Glaze type: white ware				
No specific decoration				
Vessel form	MNV count	MNV proportionate to total MNV of glaze type	Total sherd count	Total weight of sherds (g)
Small bowl (< 10cm)	1	5.0%	205	1279.6
Medium bowl (10cm - 15cm)	3	15.0%		
Large bowl (> 15cm - 20cm)	1	5.0%		
Extra-large bowl (> 20cm)	1	5.0%		
Small cup (< 5cm)	1	5.0%	85	327.6
Medium cup (5cm - 8cm)	5	25.0%		
Large cup (> 8cm)	2	10.00%		
Large plate (> 15cm - 20cm)	1	5.0%	3	52
Covered box	1	5.0%	5	22.8
Figurine	na	na	4	38.6
Jar	1	5.0%	4	106.3
Saucer	1	5.0%	19	139.6
Spoon	na	na	78	281.4
Teapot	1	5.0%	2	3
Others	1	5.0%	5	62
Unknown	na	na	37	144.75
Total	20	100%	447	2457.65

Table 4. 46 MNV of vessel forms with white glaze.

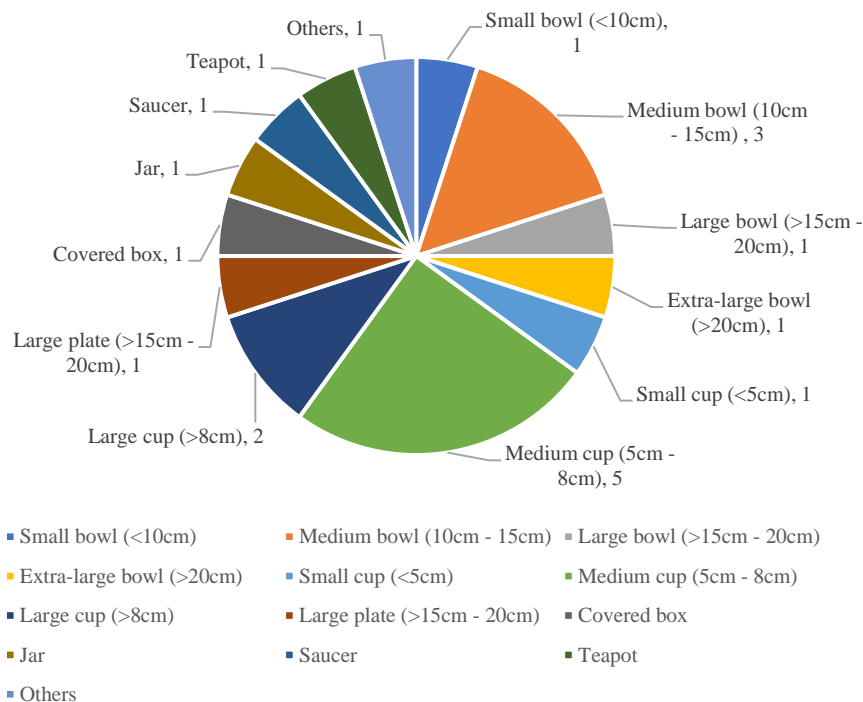


Table 4. 47 Pie chart illustrating MNV proportions of white vessel forms.

White glaze porcelains, like monochrome wares, are characterised by the absence of underglaze and overglaze decoration. Unlike winter green wares, white wares are a generic porcelain category without one clear provenance or decorative feature. Approximately 70% of white ware forms were either bowls or cups, with a variety of other vessel forms present within the category. Most of these sherds were undecorated except for several sherds with moulded designs. These moulded designs were not categorised as a decoration type due to their extensive and ambiguous application. Ambiguous moulded designs were not photographed due to their small size, resulting in uncertainty if such features were intentionally created.

Figure 4.50 shows the examples of an undecorated medium bowl and cup, and a saucer. These vessel forms are relatively standardised with no unique features compared to polychrome and blue and white porcelains. White glaze saucers (figure 4.50d) are identified by the circular indent on the interior of the vessel's base. While no records can confirm their definite function, one can only imagine that such saucers were designed to hold porcelain cups.

A series of white porcelains were also found with distinct moulded surfaces. Figure 4.51 shows three sherds with such moulded designs. The fluted designs on these vessels bear a resemblance to the patterned curves found on seashells, producing a lustrous surface when illuminated. Some of these designs extend to the edges of the vessel, creating scalloped lips that follow the contours of the fluted columns. Although the term "moulded" typically denotes an intentional elevation on the porcelain surface, as opposed to an impressed mark characterised by a depression on the porcelain's surface, the specific technique used to create these patterns remains unknown.

White porcelain from the nineteenth and twentieth centuries has not been well documented. This is possibly due to their lack of decoration and means to identify their presence. For instance, undecorated white sherds at IKG could have originally been part of the white porcelain body of a polychrome ware. Such complications make conclusions about white porcelain's presence difficult. Several intact white porcelain wares were found in PSG. Barry's arbitrary categorisation that associates finer and coarser white porcelain to Jingdezhen and Fujian or Guangdong respectively, remains inconclusive and calls for further field studies to provide more insights.

Like monochrome porcelain, white porcelain is a generalised category that requires further investigation regarding its historical prevalence and production in the nineteenth and twentieth centuries. Thus, both monochrome and white porcelains are not applicable for comparative analyses due to the limitations of perceivable attributes on such sherds from IKG. The subsequent chapter presents a comparative analysis of the blue and white, and polychrome decoration types between each site. Similarities and differences between sub-assemblages highlight the historical implications of trade and consumption patterns, and to a greater extent, the availability of various types of porcelain.



Figure 4. 50 Exterior and interior of undecorated white glaze sherds.
Top (from left to right): profile of bowl (4.50a) and profile of cup (4.50b). Bottom (from left to right): body of bowl (4.50c) and base of saucer (4.50d).



Figure 4. 51 Exterior and interior of moulded white glaze sherds.

Making sense of the typology

The typology developed in this thesis presents an extensive variety of nineteenth and twentieth-century Chinese porcelain sherds identifiable by their glaze, forms, and decorations. However, the examination of different attributes inevitably demonstrates varying levels of consistency. Blue and white glaze types offer the clearest examples of decorative attributes often displaying relatively consistent motifs and decorative configurations. For instance, the positions of decorative scrolls and the respective recurring motifs on double happiness, Shanghai ware, and chrysanthemum designs are usually consistent between sherds recovered from IKG and other archaeological sites. Polychrome sherds exhibit less consistent decorative attributes that were categorised thematically. Aside from the four seasons decoration, these sherds frequently possess a variety of floral and geometric designs that rarely exhibit identical decorative configurations. The ease of identifying blue and white, and polychrome glaze types is not surprising due to their distinct overglaze and underglaze attributes – such as colour and technique – that set them apart from the other glaze types.

Winter green, monochrome, and white glaze types featured no distinct decorative attributes and were examined either as a decorated or undecorated sherd. Winter green sherds were identified by their glaze colour and absence of decorative features. Monochrome and white glazed sherds demonstrated irregular decorative attributes that were broadly recognised as incised or moulded design. As such, these two glaze types do not qualify for the comparative analysis in the following chapter.

CHAPTER FIVE PRESENCE OR ABSENCE OF CHINESE PORCELAIN BETWEEN ARCHAEOLOGICAL SITES

Chinese porcelain consumers in Market Street Chinatown and Cangdong Village

In 1866, three Chinese businessmen leased a piece of land at the heart of San Jose, California, which drew the attention of Chinese entrepreneurs who developed the location into what became known as Market Street Chinatown.²⁷⁴ Market Street Chinatown was a Chinese headquarters featuring residences and stores that catered to the social and economic needs of approximately 3,000 Chinese immigrants in the surrounding area.²⁷⁵ The Chinese immigrants who lived and visited the centre were mostly merchants and labourers in agriculture, mining, services, and industry.²⁷⁶ Market Street Chinatown was a safe haven for its inhabitants who frequently encountered racism during the anti-Chinese movement insinuated by public aggressors and political leaders who were uncomfortable with the influx of Chinese immigrants.²⁷⁷ Arsonists set ablaze Market Street Chinatown during a period of discriminatory hostility towards its Chinese residents on May 4, 1887, destroying most of its infrastructure.²⁷⁸

A period of archaeological excavations was conducted at the old site of Market Street Chinatown from July 1985 to September 1988. Archaeological units at the site are mostly associated with the location's Chinese residents.²⁷⁹ Thus, it is reasonable to assume that the consumers of Chinese porcelain recovered from the site were probably the Chinese residents and visitors of Market Street Chinatown.

Similarly, the consumers of Chinese porcelain at Cangdong Village were its Chinese residents in the nineteenth and twentieth centuries. The small rural village in Guangdong, China,

²⁷⁴ Voss et al., "Market Street Chinatown Archaeology," 63.

²⁷⁵ Voss et al., "Market Street Chinatown Archaeology," 63.

²⁷⁶ Voss et al., "Market Street Chinatown Archaeology," 63.

²⁷⁷ Voss et al., "Market Street Chinatown Archaeology," 63.

²⁷⁸ Voss et al., "Market Street Chinatown Archaeology," 63.

²⁷⁹ Voss, "Serious Games," 35.

had about 400 residents in the early nineteenth-century, with around 86% migrating to Hong Kong, North America, and Southeast Asia for better economic prospects at the turn of the century.²⁸⁰ Cangdong Village is a *qiaoxiang* or migrants' home village, where kinship structures and financial dependency through remittances from overseas Chinese continue to influence the social and physical environment of the village.²⁸¹ Chinese porcelain recovered from the location could have been consumed by residents or even acquired from markets inaccessible to locals at Cangdong Village, but made possible by returning Chinese migrants.

Consumers of Chinese porcelain at Market Street Chinatown and Cangdong Village in the nineteenth century were either mostly or exclusively Chinese. The certainty of this information is based on historical documentation of the two sites and the ethnographic studies conducted to learn about their inhabitants. The consumers of Chinese porcelain at IKG remains obscure despite the fact that the descendants of Sultan Hussein occupied the residence for most of its history due to the site's frequent engagement with communal activities. The people using the site were not restricted to the royal family and its extended household.

²⁸⁰ Voss, Kennedy, and Tan, *Transnational Lives*, 16.

²⁸¹ Voss et al., "Archaeology of Home," 412.

Price grading Chinese porcelain

IKG			
Price graded porcelains	Sherd count	Sherd count per grade	% of sub-assembly
Winter green (grade I)	60	86 (59.72%)	5.66
Four seasons (grade I)	26		
Double happiness (grade II)	58	58 (40.28%)	3.82
Bamboo (grade II)	0		
Total	144	144 (100%)	9.48
Market Street Chinatown			
Price graded porcelains	Sherd count	Sherd count per grade	% of sub-assembly
Winter green (grade I)	1,158	2,930 (68.88%)	61.97
Four seasons (grade I)	1,772		
Double happiness (grade II)	91	1,324 (31.12%)	28
Bamboo (grade II)	1,233		
Total	4,254	4,254 (100%)	89.97
Cangdong Village			
Price graded porcelains	Sherd count	Sherd count per grade	% of sub-assembly
Winter green (grade I)	9	9 (9.28%)	0.58
Four seasons (grade I)	0		
Double happiness (grade II)	82	88 (90.72%)	5.63
Bamboo (grade II)	6		
Total	97	97 (100%)	6.21

Table 5. 1 Price graded porcelains from IKG, Market Street Chinatown, and Cangdong Village.

Total sherds in IKG's Chinese porcelain sub-assembly: 1,520.

Total sherds in Market Street Chinatown's Chinese porcelain tableware sub-assembly: 4,728.

Total sherds in Cangdong Village's Chinese porcelain tableware sub-assembly: 1,563.

Four types of porcelain wares were assessed for their estimated economic value based on the Kwong Tai Wo Company's inventories recovered from a general store in California. The distinction between price grades I and II is based on Sando and Felton's works that identified two dominant price ranges of porcelain sold from 1871 to 1883 (refer to table 2.5). Grade I porcelain consist of winter green and four seasons sherds, representing a more

expensive category of wares. Grade II porcelain consists of double happiness and bamboo sherds that were significantly cheaper, costing about half the price of grade I porcelain in the latter half of the nineteenth century.²⁸²

Table 5.1 presents a comparison of grade I and grade II porcelain at IKG. Grade I porcelain constitutes a higher proportion (about 59.72%) across the four porcelain types. The bamboo decoration is absent at IKG, while significantly found at Market Street Chinatown. Grade I porcelain at IKG solely comprises double happiness decorated sherds. There are about twice as many winter green sherds as there are four seasons sherds.

The proportion of grade I and grade II porcelains from Market Street Chinatown exhibits similarities to IKG in the distribution of sherds between the two grades. Grade I sherds account for 68.88% of the total graded sherds at Market Street Chinatown, representing a slightly higher proportion compared to IKG. However, when considering the entire sub-assembly, grade I sherds from IKG make up 5.66%,²⁸³ whereas those from Market Street Chinatown account for 61.97%. Similarly, grade II sherds from IKG make up only 3.82% of the Chinese porcelain sub-assembly, compared to 28% in Market Street Chinatown's sub-assembly. This means that the price graded sherds at IKG represent a relatively small percentage (9.48%) of the sub-assembly compared to those from Market Street Chinatown, which represent a significant 89.97%.

A significant proportion (90.72%) of graded sherds from Cangdong Village were grade II porcelain. Majority of the sherds from this grade were decorated with the double happiness design. Only 9.28% of the sherds were grade I, which solely consist of winter green sherds since there was an absence of four seasons sherds. These three graded porcelains represent

²⁸² Sando and Felton, "Inventory Records of Ceramics," 163.

²⁸³ The proportions and main porcelain types in the IKG sub-assembly is distinctly different from that of the sub-assembly from Market Street Chinatown.

17.47% of Cangdong Village's Chinese porcelain sub-assembly. The stark contrast between Cangdong Village's grade I and II proportions and those from IKG and Market Street Chinatown indicate that a greater fraction of more expensive porcelain wares was acquired at the two sites outside of China. However, these price grades are not representative of the respective sub-assemblages' economic value. An estimate of their economic values is not possible because the price grades of the remaining decoration types cannot be assessed due to inadequate records of their prices in the nineteenth century. Explanations for the similarities and differences between these Chinese porcelains from the three sites include possible reasons of availability of various porcelains to merchants and consumers, economic considerations, and consumption habits.

Dissimilar wares of archaeological prominence

The comparison between Chinese porcelain sub-assemblages reveals that the four dominant wares (winter green, four seasons, double happiness, and bamboo) at Market Street Chinatown are not as significant at IKG and Cangdong Village. The most notable difference is the absence of the bamboo decoration at IKG, which was largely found on rice bowls commonly recovered at Chinese railroad and mining camps in the United States dated between 1870s and 1880s.²⁸⁴ There is strong evidence that the production of bamboo decorated vessels superseded that of double happiness. The former decoration proved to be prominent after 1870, while the latter was prominent before that time at Chinese workers' camps in the United States.²⁸⁵ However, this temporal interpretation requires further comparisons with archaeological sites outside of the United States.

²⁸⁴ Greenwood, *Down by the Station*, 70.

²⁸⁵ Sando and Felton, "Inventory Records of Ceramics," 165.

One possible explanation for the presence of double happiness and the absence of bamboo sherds at IKG is that the former was carried or in demand by Chinese immigrants in Singapore before bamboo-decorated wares became accessible to them. Singapore was a major port for the operations of Chinese coolie agencies and the entry point into Malaya between the 1850s and 1870s.²⁸⁶ During these few decades, the majority of Chinese immigrants in Singapore was recruited for the mining and plantation industries elsewhere in Southeast Asia.²⁸⁷ The Chinese that remained in Singapore were a heterogeneous population that were largely involved in trade, crafts, and unskilled labour.²⁸⁸ The presence of double happiness bowls at IKG, which are associated with low income Chinese labourers in North America,²⁸⁹ could also represent the initial presence of Chinese labourers in Singapore.

This is not to say that coolies were certainly consumers of double happiness porcelain. Rather, it suggests that Chinese workers could have contributed to the demand for this decoration type. Trade records of Chinese exports arriving in Singapore indicate that Chinese porcelain was among the top five commodities between 1845 and 1856, and between 1870 and 1871.²⁹⁰ This documentation supports the idea that the market that drove the demand for Chinese porcelain – which includes double happiness wares – between the 1850s and 1870s was the influx of Chinese immigrants who arrived in Singapore to find work in the region.

The presence of both winter green and four seasons sherds at IKG and Market Street Chinatown indicates that merchants in Singapore and Western United States had access to porcelain from Jingdezhen in the nineteenth century. Choy notes that these porcelain wares were widely imported into the United States until the Second World War, when maritime trade

²⁸⁶ Yen Ching-Hwang, “Chinese Coolie Emigration, 1845 – 1874,” in *Routledge Handbook of the Chinese Diaspora*, edited by Chee-Beng Tan (Oxford and New York: Routledge, 2013), 74.

²⁸⁷ Maurice Freedman, “Immigrants and Associations: Chinese in Nineteenth-Century Singapore,” *Comparative Studies in Society and History* 3, No. 1 (1960): 26, accessed July 20, 2023, <https://www.jstor.org/stable/177895>.

²⁸⁸ Freedman, “Immigrants and Associations,” 26 – 27. Chinese in Singapore were notably categorised into six groups by fellow Chinese immigrants in the nineteenth century: Cantonese, Hainanese, Hakka, Hokkien, Malacca (Straits) Chinese, and Teochew.

²⁸⁹ Sando and Felton, “Inventory Records of Ceramics,” 165.

²⁹⁰ Lim, “Merchants in Singapore,” 88 – 89.

between China and the States ceased.²⁹¹ The absence of four seasons and presence of only nine winter green sherds at Cangdong Village either suggests that it was difficult to acquire Jingdezhen porcelain, or that the villagers did not prefer these wares, possibly due to their higher cost or consumption habits respectively. Another possible reason for the absence of four seasons at Cangdong Village is that the decoration was produced as an export ware targeted at the overseas Chinese and global market in the nineteenth century. The presence of four seasons at Market Street Chinatown and IKG suggests that both sites had similar access to the floral polychrome variety that was exported overseas, but these wares do not appear in the archaeological record of certain domestic sites, such as Cangdong Village.

Analysing decorative variety as a glimpse of access and demand for Chinese porcelain IKG

Glaze type	Decoration type	IKG		Market Street Chinatown		Cangdong Village	
		Sherd count	% of sub-assembly	Sherd count	% of sub-assembly	Sherd count	% of sub-assembly
Blue and white	Double Happiness	58	3.82	91	1.92	82	5.25
	Bamboo	0	0	1,233	26.08	6	0.38
	FitzHugh	0	0	2	0.04	0	0
	Fu/Bat Motif	0	0	2	0.04	0	0
	Diaper and cloud	0	0	1	0.02	0	0
	Cormorant	0	0	0	0	1	0.06
	Xunzhongzhen	0	0	0	0	3	0.19
	Crown	0	0	0	0	2	0.13
	Blue and white unglazed reserve	0	0	0	0	25	1.60
	Shanghai ware (simple flower)	37	2.43	49	1.04	0	0
	Rock and orchid	5	0.33	0	0	3	0.19
	Chrysanthemum	82	5.39	0	0	1	0.06
	Sino Sanskrit	11	0.72	0	0	1	0.06
	Fungus	25	1.64	0	0	0	0
	Dragon	12	0.79	0	0	0	0
	Landscape	10	0.66	0	0	0	0
	Shou	1	0.07	0	0	0	0
	Unique blue and white	27	1.78	0	0	0	0
Polychrome	Floral (including four seasons)	183	12.04	1,772	37.49	6	0.38
	Geometric	28	1.84	0	0	6	0.38
	Green glaze polychrome	10	0.66	0	0	0	0
	White design on orange glaze	0	0	2	0.04	0	0
	Unique polychrome	18	1.18	0	0	0	0
Total		507	33.35	3,152	66.67	136	8.68

Table 5. 2 Sherd count of blue and white, and polychrome decorations identified at IKG, Market Street, and Cangdong Village.

953 excluded sherds from IKG: indistinguishable decorations, undecorated, winter green, white, and monochrome sherds.

1,576 excluded sherds from Market Street: indistinguishable decorations.²⁹²

1,427 excluded sherds from Cangdong Village: indistinguishable decorations, white (also referred to as “plain”), and “modern” sherds.²⁹³

²⁹¹ Choy, “Interpreting “Overseas Chinese” Ceramics,” 2.

²⁹² Voss et al., “Archaeology of Home,” 417.

²⁹³ Voss et al., “Archaeology of Home,” 417; Voss, “Analysis of Table Ceramics,” 70. The Cangdong Village Chinese porcelain sub-assembly has a total of 1,563 sherds. Unfortunately, the number of sherds for porcelain identified as “modern,” which refers to porcelain from 1949, is unavailable. However, photographic

A comparison of underglaze and overglaze decorated sherds demonstrates a more significant contrast between IKG and the two sites in the US and China. Table 5.2 shows the assortment of blue and white and polychrome decorations from the three sites. IKG possesses the largest variety of blue and white decorations, with a total of nine, excluding an addition of indefinite number of unique decorations. With the addition of multiple unique decorations presented in the typology, IKG has more than nine blue and white varieties. Cangdong Village possesses nine decoration types, while Market Street Chinatown has six, without the addition of unique blue and white decorations. This suggests that inhabitants of IKG either had access or demanded a greater variety of blue and white porcelain compared to the populations at the other two sites.

Cangdong Village reveals comparable proportions of distribution to IKG across various decorations. For instance, the most prominent blue and white decorations at IKG (chrysanthemum) and Cangdong Village (double happiness) occupy 5.39% and 5.25% of the respective sites' Chinese sub-assembly. These proportions are in stark contrast to Market Street Chinatown where the most recurring blue and white decoration (bamboo) comprises 26.08 % of the site's Chinese porcelain sub-assembly. These proportions indicate that the frequency of blue and white sherds at IKG and Cangdong Village are widely distributed across different decoration types compared to Market Street Chinatown's blue and white sherds that predominantly consist of bamboo sherds.

The varied distribution of sherds bearing specific decorations at IKG and Cangdong Village suggests that the inhabitants of the two sites had access to a wider range of designs in the nineteenth century compared to those in Market Street Chinatown. The presence of a more extensive range of blue and white decorations implies a greater supply, availability, and

documentation of these sherds show resemblance to some polychrome sherds in the IKG sub-assembly. White glaze porcelain was also recovered from Cangdong Village, though it has been termed "plain" porcelain.

possibly demand for decorative variety. However, this interpretation of seemingly higher availability and demand for variety at IKG and Cangdong Village should also consider the shorter period (1866 – 1887) activity at the Market Street Chinatown. Cangdong Village’s archaeological units were primarily dated between the late Qing period (1875 – 1912) and the early Republic period (1912 – 1927),²⁹⁴ while IKG units were indeterminately dated between the nineteenth and early twentieth centuries. Nonetheless, the concentration of bamboo decorated sherds at Market Street Chinatown reveals a stronger presence of demand for one decoration whereas such a trend is not recognised at the other two sites. The lack of a trend at IKG and Cangdong Village also highlights the possibility of a wider variety of porcelain supplied or available to the market at the two sites compared to Market Street Chinatown.

Certain blue and white decorations at IKG reveal that its inhabitants had access to ceramic products from distinct kiln sites in China. Shanghai ware sherds of the sweet pea variety, also called the “simple flower” decoration in North America, were found at IKG. This decoration is associated with the Jingdezhen kilns where four seasons and winter green vessels were produced.²⁹⁵ Similar to the Market Street Chinatown site, all three decorations associated with the Jingdezhen kilns in Jiangxi Province were present at IKG, while no Shanghai ware sherds were found at Cangdong Village. In addition to IKG’s wider variety of decorations, Shanghai ware sherds are not limited to the sweet pea and sweet pea and butterflies varieties but also include brittle star. The variations – discussed in the typology chapter – applied to Shanghai ware vessels from IKG also call into question the argument for a sole production site for the sweet pea decoration made by North American archaeologists.

Likewise, the presence of fungus, Sino Sanskrit, and dragon decorations at IKG

²⁹⁴ Barbara L. Voss, Ryan Kennedy, and Selia Jinghua Tan, “Methods and Results of Subsurface Testing of Deposits at Cangdong Village,” in *The Transnational Lives of Chinese Migrants: Material Culture Research from a Guangdong Province Qiaoxiang*, trans. Jiajing Wang, Yahui He, and Ran Chen, ed. Barbara L. Voss and Ryan Kennedy (California: Stanford Archaeology Center, 2019), 41.

²⁹⁵ Voss et al., “Archaeology of Home,” 418.

suggests that its consumers had access to ceramics produced in Southern Fujian kilns where numerous sherds with these decorations were archaeologically recovered. These decorations were not found in Market Street Chinatown, suggesting that ceramics from Southern Fujian were either not accessible or in demand by its inhabitants in the nineteenth century. Among these decorations, only one Sino Sanskrit sherd was recovered from Cangdong Village, which indicates the villagers might have access to Southern Fujian ceramics. Another report of findings from Cangdong Village, which had no records of sherd count, shows that sherds with fungus decorations were also found at the site.²⁹⁶ One can also argue that these decorations were reused at various local kilns accessible to the inhabitants of Cangdong Village in the late Qing Period.

One possible explanation for the presence of these vessels at IKG, believed to have been produced in Southern Fujian, is the heterogeneous Chinese population in Singapore which consisted of migrants from Fujian often referred to as Hokkien. Trade relations between Singapore and Fujian had been well established by the early nineteenth-century. The first documentation of a Chinese junk ship with exports from Xiamen in Fujian Province arrived in Singapore in February 1821.²⁹⁷ While it is unclear who exported or when these porcelain wares were first exported to Singapore, it is certain that inhabitants at IKG had access to porcelain produced in Fujian based on a substantial number of merchants from the Province who established family businesses in Singapore to import goods from their hometown.²⁹⁸ It is important to note that historical actors enabling access to trade products are not necessarily the consumers contributing to the demand of such wares. While Fujian merchants might have been the possible facilitators of porcelain trade in Singapore does not imply that the Chinese were

²⁹⁶ Voss, "Analysis of Table Ceramics," 79. It is possible that the sherd count for fungus decorations found at Cangdong Village was omitted from the data due to its continuous production in the mid-twentieth century (modern period), a period that was excluded from the comparison with Market Street Chinatown's Chinese porcelain.

²⁹⁷ Buckley, *An Anecdotal History*, 67.

²⁹⁸ Lim, "Chinese Merchants in Singapore," 82.

the consumers of these porcelain wares at IKG.

These blue and white finds at IKG strongly suggest that IKG's inhabitants had access to a wider variety of Chinese porcelain than people at Market Street Chinatown and Cangdong Village. This comparison considers sherds that were categorised as "landscape" and "unique" decoration types that include a variety of standalone designs only available at IKG. The even distribution of sherds across decorations at IKG demonstrates that the consumers were inclined to acquiring a variety of decorated porcelain over any one type. This distribution trend differs from the sub-assemblage at Market Street Chinatown where a concentration of bamboo sherds suggests a stronger inclination for one type of decoration compared to the others.

Similar distribution patterns are observed regarding polychrome decorations at the three sites. Polychrome sherds in Table 5.2 were clumped according to decoration types identified in this thesis' typology. The clustering of decorations was necessary for IKG due to its extensive variety of polychrome sherds which made them challenging to identify and group due to overglaze degradation and fragmentation. IKG had no fewer than 46 different varieties of distinct polychrome decorations photographed and discussed in the typology chapter. The presence of this extensive variety of polychrome decorations at IKG differs from the nearly homogenous population of polychrome sherds at Market Street Chinatown, which comprises 1,158 "four seasons" and two "white design with orange glaze" sherds.

The distribution patterns of polychrome decorated sherds from IKG and Market Street Chinatown reveal a consistent difference in consumption patterns, demonstrating the contrasting inclinations by the populations towards variety and homogeneity of decoration types at the two sites. However, inclination does not necessarily imply preference since market demand is multifaceted. An inclination towards a specific decoration type may indicate limited access to other options, an affiliation to a particular production site, merchant, or store, or a consumption habit influenced by socioeconomic circumstances (e.g., common practice within

the community).

The variety of polychrome decorations at IKG is also greater than that of Cangdong Village, even though both sites exhibit a wider range of similar polychrome decorations than with Market Street Chinatown. Figure 5.1 features eight sherds from IKG and Cangdong Village, each showing decorative similarities with one another. The decoration described as the *piqiu* (ball) pattern (5.1a), “consists of asymmetrically-placed circular decorations, typically with geometric or floral motifs on the interior of each ball.”²⁹⁹ Figure 5.1e resembles a similar circular decoration with a geometric pattern enclosed within two concentric circles. The green diaper pattern in Figure 5.1b shares similarities with the scalloped diaper pattern in Figure 5.1e. Both patterns display green lattices that form multiple lozenges filled with pink dots. This decoration is suggested to originate under the Jiajing Emperor’s reign (1521 – 1567) of the Ming Dynasty.³⁰⁰ Batavia brown sherds (commonly called Tzu Chin by North American archaeologists) were also recovered from both sites, though the sherd (Figure 5.1g) from IKG exhibits a glossier finish on its exterior compared to the sherd from Cangdong Village (Figure 5.1c). Another sherd (Figure 5.1d) categorised as “floral polychrome”³⁰¹ by archaeologists studying Cangdong Village’s ceramics, shows similar decorative elements to a rim sherd (Figure 5.1g) from IKG. Both sherds possess two rows of green dots packed between blue concentric lines, and a green and pink floral motif. These similarities within the wide variety of porcelain recovered from IKG and Cangdong Village suggest that inhabitants from both sites had access to polychrome Chinese porcelain.

²⁹⁹ Voss, “Analysis of Table Ceramics,” 84.

³⁰⁰ George Kuwayama, *Chinese Ceramics in Colonial Mexico* (Honolulu and Los Angeles: University of Hawaii Press and Los Angeles County Museum of Art, 1997), 65.

³⁰¹ Voss, “Analysis of Table Ceramics,” 83.



Figure 5. 1 Similar polychrome decorations between IKG and Cangdong Village.
Top (from left to right); Cangdong Village: piquiu pattern (5.1a), diaper pattern (5.1b), Tzu Chin (Batavia) pattern (5.1c), and floral polychrome (5.1d).
Bottom (from left to right); IKG: geometric motif in circle (5.1e), similar lattice pattern with curved lines (5.1f), Batavia brown (5.1g), and similar floral polychrome design.

In summary, the relatively sporadic distribution of sherds across the wide variety of decoration types at IKG reveals that its inhabitants were more likely to purchase Chinese porcelain in small quantities rather than in larger sets. Their consumption habits were similar to the Chinese consumers at Cangdong Village, though their reasons for consumption might have been different. The concentration of sherds with decorations of bamboo, four seasons, and winter green at Market Street Chinatown, California suggests that the overseas Chinese in San Jose had a different consumption habit from the inhabitants at IKG. This consumption pattern at IKG shows the presence of a larger variety of porcelain options available to its inhabitants.

The wider variety of IKG's blue and white and polychrome decorations compared to the other two sites suggest that its inhabitants might have had access to a more extensive Chinese porcelain market. A few possible reasons for such accessibility could be Singapore's heterogenous Chinese population in the nineteenth century which led to access to a vast network of ceramic producers in China, IKG's strategic location within the global trading hub of Kampong Gelam, and the potential exceptional spending power of some of IKG's

inhabitants who were affiliated to Malay royalty or elites within the neighbourhood. These reasons remain speculative without relevant historical ethnographic accounts of the inhabitants that might have consumed Chinese porcelain at IKG.

CHAPTER SIX CONCLUSION

The objective of this thesis was to identify the types of Chinese porcelain from the nineteenth and early twentieth centuries accessible to the inhabitants of IKG. A typology focusing on nineteenth- and twentieth-century Chinese porcelain, previously not created in Singapore's archaeological context, was developed to discuss the significance of the findings at IKG. This typology categorises sherds based on glaze, form, and decoration types. Sherds were evaluated through observation, cross-comparison with existing scholarship, and analysis of historical documentation. An emphasis on the analysis of decorations enabled a clearer comparative discussion of the presence or absence of porcelain wares from the Market Street Chinatown and Cangdong Village Chinese porcelain sub-assemblages.

Five distinct glaze types were identified from IKG's Chinese porcelain sub-assemblage: blue and white, winter green, polychrome, monochrome, and white. The three most common glaze types, based on the quantity of sherds, were the polychrome, white, and blue and white, in an ascending order. Blue and white and polychrome decorations exhibited distinct decorative elements due to the presence of underglaze and overglaze details. Nine types of blue and white decorations were identified at IKG, excluding those categorised as unique designs. Three types – Shanghai ware, chrysanthemum, and fungus – were found to have identifiable varieties that displayed slight differences in motifs and decorative configuration. The chrysanthemum, Shanghai ware, and double happiness decorations were the most dominant decoration types among the blue and white sherds.

Polychrome decoration types were identified and grouped according to similar motif subjects and glaze combinations. Three main types of polychrome decorations were identified: floral, geometric, and green glaze polychrome. Floral polychrome decorations were the most common sherds. Only one distinct variety of floral decorations – the four seasons – was identified among an assortment of floral decorations. This distinction was made possible due

to the prominence of four seasons decoration in nineteenth-century overseas Chinese sites in North America, which has resulted in considerable study.

Winter green, white, and monochrome wares were identified by the absence of underglaze and overglaze decorations. Although white glaze and monochrome sherds exhibited decorative elements such as incised and moulded patterns, the lack of relevant scholarship prevented an in-depth discussion of these wares. The decorations of these wares were not categorised due to the large quantity of sherds that were too small to distinguish any type of decoration.

The second objective of this thesis was to assess the potential differences between the Chinese porcelain sub-assemblage from IKG and those at Market Street Chinatown in California and Cangdong Village in Guangdong Province, which had distinct groups of Chinese consumers. This comparison uncovers similarities and differences among Chinese porcelain decoration types from these three distinct locations, revealing global linkages and contrasting consumption patterns that demonstrate varying degrees of market access and demand for specific types of wares among the respective inhabitants.

Four seasons, winter green, double happiness, and bamboo wares were assessed using a relative price grade system to distinguish between costly (grade I) and less expensive (grade II) porcelains. IKG was most similar to Market Street Chinatown, showing similar proportions of grade I and II sherds, with a larger quantity of more expensive wares. Price graded sherds from Cangdong Village demonstrated a more significant proportion of grade II wares. While this initially suggests that consumers outside of China had greater access and demand for more expensive wares, it is important to note that these four types of wares were only representative of Market Street Chinatown's dominant sherds as the bamboo and four seasons decorations were absent in IKG and Cangdong Village respectively. The absence of bamboo sherds at IKG

might also signal that less expensive wares produced from the 1870s were either unavailable or not in demand by consumers at the site.

Comparison of IKG's porcelain wares with those from Market Street Chinatown and Cangdong Village demonstrated that each site had a different set of dominant wares. For instance, the top three wares with the highest sherds counts at IKG (excluding clustered decoration types, e.g., "geometric polychrome") were chrysanthemum, winter green, and double happiness. The stark contrast between the highest recurring decoration at IKG (5.39%) and that of Market Street Chinatown (37.49%) indicates that IKG had a relatively variegated distribution of sherds. The distribution of sherds across the various decorations showed that Chinese porcelain sherds from IKG and Cangdong Village exhibited a greater variety of decorations than those from Market Street Chinatown, which was saturated with winter green, four seasons, and bamboo sherds. Differences between IKG and Cangdong Village also underlined the wider variety of blue and white, and polychrome decorations accessible to consumers from the former site. Consumers at IKG were also possibly inclined to purchase individual vessels with unique decorations instead of acquiring large sets of similar design. This consumption habit reiterates the possibility that consumers at IKG had a wider range of options regarding the consumption of Chinese porcelain.

Limitations and further research

The price grades implemented in this thesis were limited to four types of wares due to the absence of price documentation for the others. The relative economic value of the Chinese porcelain sub-assembly was not achievable due to this limitation. In addition, relative prices were estimated using the Kwong Tai Wo Company's inventories in California, which could vary from prices of similar wares sold in Guangdong, China, and Singapore. The lack of geographically specific price documentation of Chinese porcelain limits this study to the

assumption that porcelains sold across the three sites were of similar relative prices. Further investigation of the relative economic value of Chinese porcelain from IKG would only be viable if additional price information from historical inventories in Singapore could be uncovered. While such documentation is not known in Singapore, future researchers with ample time can strive to acquire price inventories and conduct oral interviews with Chinese porcelain collectors who might have historical insight into the production and sales of such wares.

Another limitation resulting from inadequate documentation is the difficulty this author faced in attempting to determine specific names for most of the polychrome decorations. Unlike the detailed study of the four seasons, the majority of polychrome decorations were categorised by their generic floral or geometric motifs. Consequently, the comparison of polychrome sherds across the three sites was largely discussed in terms of the differing number of varieties instead of highlighting the absence of specific decoration types.

This study is also limited by the indeterminable consumers of Chinese porcelain at IKG. The available evidence on existing Chinese merchant networks in Singapore is insufficient to definitively conclude that IKG Chinese porcelains were consumed only or mainly by the Chinese. Similarly, the presence of Malay royalty at the Istana does not provide conclusive evidence that Malays were consumers of these Chinese porcelains. More evidence of lived experiences in the vicinity of IKG is required to understand who would have used and disposed of Chinese porcelain within the Istana's compound. One way of approaching this is to develop an ethnographic study of the people who lived and worked along the roads within the borders of IKG. Such an undertaking should work toward gathering oral recordings by inhabitants in various languages and in particular, tracking down the descendants of previous residents who lived across the roads surrounding IKG, whose accounts may provide insight into the consumption habits and activities relevant to the use and disposal of Chinese porcelain.

The Chinese porcelain typology presented in this thesis provides an opportunity for further comparisons to be made with other sub-assemblages in Singapore. For instance, comparing Chinese porcelain from IKG with DXT can help highlight the similarities and differences between two sites which had distinct demographics. Such a comparison can also provide valuable insights into the consumption patterns of possible Chinese consumers at IKG in relation to DXT's dominant Chinese population. Similarly, the Chinese porcelain documented in this thesis presents an opportunity for cross-comparisons to be made with other European and Japanese porcelain sherds recovered from IKG. Such a comparative analysis would enable a comprehensive survey of the porcelains that were disposed of at IKG, possibly revealing a more accurate representation of consumer preference.

Future researchers can also consider the implications of similarities and differences of Chinese porcelain between sites on a global scale. Potential research directions include the study of regional consumption patterns within Southeast Asia, the relationship between consumer behaviour and the distance of the site from porcelain production centres, and a more ethnographic approach that investigates the different functions of Chinese porcelains in various cultures. Examining the preference for and availability of particular ceramics across different societies may unveil more aspects of quotidian life, serving as traces of untold stories yet to be recovered.

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APPENDIX

Artifact Number	Unit Number	Depth (cm)	Lot	Spit	Level	Material	Variety of materials	Type of ware	Provenance	Period	Form	Vessel Part	Number of pieces	Weight (g)	Length (cm)	Width (cm)	Thickness (cm)	Thickness of base (complete profile) (cm)	Height of foot rim (cm)	Thickness (foot rim) (cm)	Diameter (cm)	MNV (%)	Remarks	Motif Types	
IKGPOR073 2	IV B3			1		Ceramics	Porcelain	Porcelain - Blue and White	Chinese	19th century, 20th century	Bowl	Body (with decoration)	1	3	3.1	1.9	0.4						Blue and white. Chrysanthemum and devolved conch shells ("Allah" type) motif. Conch shells with scrolls on interior. Concentric line on exterior.	Chrysanthemum and conch shells	
IKGPOR075 8	Salvage					Ceramics	Porcelain	Porcelain - Blue and White	Chinese	19th century, 20th century	Bowl	Rim	1	14	5.8	4.2	0.3				13	9.00%	Everted rim. Blue and white. Chrysanthemum and flower stalks ("Batik" design) motif. Chrysanthemums and stalks around body on exterior. Classic scroll below lip on interior.	Chrysanthemum and flower stalks	
IKGPOR077 5	Salvage					Ceramics	Porcelain	Porcelain - Blue and White	Chinese	19th century, 20th century	Bowl	Base	1	15	1.9	5.8	0.4		0.5	0.5	8	12.00%	Footed base. Blue and white. Chrysanthemum and flower stalks motif ("Batik" design). Multiple concentric lines around centre of base on interior (2). Chrysanthemum on centre of base on interior. Undecorated on exterior.	Chrysanthemum and flower stalks	
IKGPOR079 9	IV B2			2		Ceramics	Porcelain	Porcelain - Blue and White	Chinese	19th century, 20th century	Bowl	Body (with decoration)	1	6	5.6	2.1	0.5							Blue and white. Chrysanthemum and flower stalks ("Batik" design) motif. Multiple concentric lines above cavetto on interior (2). Chrysanthemum and flower stalks around cavetto on exterior. Multiple blue concentric lines below cavetto on exterior (2).	Chrysanthemum and flower stalks
IKGPOR093 4	IV B2			3		Ceramics	Porcelain	Porcelain - Blue and White	Chinese	19th century, 20th century	Bowl	Rim	1	1	2.3	1.6	0.3				12	6.00%	Everted rim. Blue and white. Chrysanthemum and flower stalks ("Batik" design) motif. Floral scroll within concentric lines below lip on interior (1 top, 2 bottom). Multiple concentric lines below lip and around body on exterior (2).	Chrysanthemum and flower stalks	
IKGPOR096 7	IV C2			3		Ceramics	Porcelain	Porcelain - Blue and White	Chinese	19th century, 20th century	Bowl	Rim	1	2	2	2	0.3				5	5.00%	Everted rim. Blue and white. Chrysanthemum and flower stalks ("Batik" design) motif. Undecorated on interior. Classic scroll bounded by concentric lines (1 top, 1 bottom) below lip on exterior. Chrysanthemum design on body on exterior.	Chrysanthemum and flower stalks	
IKGPOR112 4	II B2			2		Ceramics	Porcelain	Porcelain - Blue and White	Chinese	19th century, 20th century	Bowl	Base	1	16	4	3.6	0.5		0.7	0.7	13	8.50%	Footed base. Blue and white. Chrysanthemum and devolved conch shells ("allah" type) motif. Chrysanthemum and devolved conch shells around cavetto on interior. Multiple concentric lines around centre of base on interior. (3) Concentric line around body on exterior. Multiple concentric lines around foot on exterior (2).	Chrysanthemum and conch shells	

Sample of dataset: sherds with chrysanthemum decorations.