

ADOPTING REAL ESTATE VALUATION METHODOLOGY TO VALUE
PATENT

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DEDICATIONS

For beloved family;

Parents (Hj. Nordin & Hjh. Hasnah)

Lovely Wife (Nur Syazwani Eliza bt Zahidan)

Firdaus & Syifa

Edy, Diba, Aimy & Anaqi

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ABSTRACT

The need for an effective patent valuation methodology has being greatly spoken among researchers in recent years. An appropriate patent valuation method had become one of the factors in determining the success or failure of patent-based companies. However unlike real estate valuation methods, the accounting method is said to be incapable in representing the worth of patent in which it was often under-valued. Apart from that, lack of universally agreed patent valuation model and no uniformity in patent valuation standard has become a hurdle towards computing the real value of patent. By exploring the characteristics and attributes of patent, it can be noted that the patent has many features that are synonymous with real estate. The aim of this study is to evaluate the similarities and differences between patent and real estate characteristics, and to assess real estate valuation methods capability to be adopted in valuing patent. Literature review, interviews as well as focus group discussions with experts in the various areas based study related to patent were conducted and analyzed through Content Analysis method in order to achieve the objectives of the study. As a result, characteristics between patent and real estate has been identified which are on the aspect of tangibility, interest, approach of methods, scope of right to exclude, obsolescent and duration of rights. These findings revealed that it is possible to value patents by adopting the real estate valuation methods especially when using the cost method and income based method. Future research specifically on the methodologies is needed to convince the market to adopt the real estate valuation methods in valuing patent as well as extended study on the promotion of real estate valuer's role in patent valuation..

ABSTRAK

Keperluan kepada kaedah penilaian paten yang berkesan telah hebat diperkatakan oleh para penyelidik pada tahun-tahun kebelakangan ini. Kaedah penilaian paten yang sesuai telah menjadi salah satu faktor dalam menentukan kejayaan atau kegagalan syarikat-syarikat berasaskan paten. Walau bagaimanapun, tidak seperti kaedah penilaian harta tanah, kaedah perakaunan dikatakan kurang membantu dalam penentuan nilai paten di mana ianya sering dinilai lebih rendah dari penilaian yang sebenar. Di samping itu juga, kurangnya model penilaian paten yang dipersetujui umum serta tiada keseragaman dalam standard penilaian paten telah menjadi halangan ke arah memperolehi nilai sebenar paten. Melalui penerokaan ciri-ciri dan sifat-sifat paten, ia boleh dilihat bahawa paten mempunyai beberapa ciri yang sinonim dengan harta tanah. Matlamat kajian ini adalah untuk mengenalpasti persamaan dan perbezaan antara ciri-ciri paten dan harta tanah serta untuk menilai sama ada metodologi penilaian harta tanah boleh digunapakai dalam menilai paten. Kajian berasaskan ulasan literatur, temubual serta perbincangan kumpulan fokus dengan pakar-pakar dalam pelbagai bidang yang berkaitan dengan paten telah dijalankan dan dianalisis melalui kaedah Analisis Kandungan bagi mencapai objektif kajian. Hasilnya, ciri-ciri di antara paten dan harta tanah telah dikenalpasti iaitu di dalam aspek ketaraan, faedah kebolehbangunan, pendekatan dalam kaedah, skop hak untuk mengecualikan, susut nilai dan tempoh hak. Kajian mendapati bahawa adalah berkemungkinan untuk menilai paten dengan menggunakan kaedah penilaian harta tanah, terutama dengan menggunakan kaedah kos dan kaedah pendapatan. Kajian lanjutan spesifik mengenai kaedah penilaian harta tanah adalah diperlukan bagi meyakinkan pasaran untuk menerima pakai kaedah penilaian harta tanah di dalam menilai paten begitu juga kajian lanjutan tentang mempromosi peranan penilai harta tanah di dalam penilaian paten.

CHAPTER 1

INTRODUCTION

1.1 Background Of The Study

In the course of recent years, the momentum on the world economy diversity has made the Intellectual Property as a standout amongst the most critical assets that serves as driver to the business sustainability. As stated by Sanjoy et. al (2007), 'the estimation of an assets' assumes a significant parts that separate organization which works in the form "old" economy than in the "new" economic structure. Inference that can be drawn from this statement is assets for an organization are not only originated from physical capital, additionally can be created from intellectual form. These intellectual assets are as patents, copyrights, trademarks or ideas.

According to Malaysia Valuation Standard, MVS (2016), Property can be defined as a legal concept including all rights, interests, and benefits in related to the ownership while Ling and Archer (2009) explained that non-physical assets such as shares, stocks, ideas, bonds and intellectual property were classified into one form of Property which is intangible assets.

There are various statements with respect to the present positive change for knowledge-based industries. Yu-Jing Chiu (2007), Houghton (2000) and Jow-Chang Ran et. al. (2005) has expressed that the position of the knowledge-based resources has been seen progressively clear and critical, particularly to cutting edge organizations where there was an evidence that demonstrate these organizations spend a considerable amount of allocations to carry out innovative work (R&D) and produce their own protected innovation (IP). The specialists likewise trust that the new age of economy development will be produced by a knowledge-based business. This is on the grounds that IP can give an expansion in open more doors in business and improve the aggressiveness of the organization.

In Malaysia, the possibility of IP to serve as one of the significant resources of an organization are progressively broad. This can be seen through the allotment given by the Malaysian government in 2013, to which an aggregate of RM200 million has been accommodated to the foundation of IP financing plans. These allotments are serves as the capacity to help organizations grew and expanded their business, additionally make IP as one of the new wellspring of wealth creation in this country (Malaysia Budget, 2013). As indicated by Datuk Azizan Mohamad Sidin, MyIPO's General Director (2013), it is a decent time for Malaysia to develop IP-based financing as the nation endeavors to wind up a developed and knowledge-based economy by year 2020 (Malaysia Budget, 2013).

Moreover, intangible assets these days transformed into the most vital component to the intensity and sustainability of an organization. As per study by Ernst and Young (2009) averagely 70% of business transactions were credited to the intangible assets for example, brands, client contract, innovation and goodwill. This focused in the sense that there was a critical movement from a modern culture to a knowledge-based society. Due to the expanding reliance of organizations on their IP, there was a development requirement for perceiving and valuing all identifiable IP in an organization as a component of transactions.

However, concern for the need of a viable intellectual property methodology has being great spoken by researchers in recent years. According to King (2001), one of the factors in determining the success or failure of IP-based companies is how viably the organization can obtain the value of the IP itself. This communicates the significance of proper IP valuation methodology. Hence, every management ought to know the real value of IP assets, with the goal that the value can simply be kept up.

In order to obtain the maximum value of IP, the method of IP valuation should be emphasized. Based on the studies under the venture IP4Inno (2008), the proper valuation strategy for IP could productively help with the creation of financially effective decisions, and could assist the management to comprehend and deal with the risks. Sanjoy (2007) additionally expressed that without legitimate valuation strategies, the IP ideas could not be produced adequately and it makes vulnerability in persistent of future cash flow stream

In contrary, tangible assets like real estate have a healthy valuation system, in which the valuation methods are uniform in verging of each nation worldwide. According to Scarret & Douglas (1991), there are five United Kingdom-born real estate valuation methods namely Cost, Comparison, Profit, Investment and Residual, which are well-established approaches to the valuation procedures and together provide the basis for valuation for an extensive variety of purposes.

In order to demonstrate the acknowledgement of real estate valuation methodologies worldwide, the International Valuation Standards Council (IVSC), which is an organization from the United Nation, has participation that envelops all the significant national valuation standard-setters and expert relationship from 41 unique nations including the Appraisal Institute, the American Society of Appraisers, the RICS, the Practicing Valuers Association of India and the Appraisal Institute of Canada. This was bolstered by explanation made by Marlon (2009), which stated that real estate valuation methodologies were moderately precise since it depends on large acknowledged techniques that able to assist in exploring the true value.

1.2 Problem Statements

Chaplinky et. al. (2002) has discussed on the ascent of the IP-based economy which summarized the vital of IP in determining the achievement of an organization. Since IP offers separation between items, it regularly holds the way to quick development in piece of the overall industries. Chaplinky et. Al (2002) has also added that analysis on Fortune 500 organizations demonstrates that market value of a company being derived by tangible assets by 60 percent. However, the rate has tumbled to only 25 percent in 20 years and the pattern looks fallen further.

Another statement made by Chaplinsky et. al (2002) is IP valuations crawled into a wide cluster of business, including procurement of candidates, determining potential merger; recognizing and organizing resources that drive value, reinforcing positions in innovation exchange transactions; settling on financials choices on IP upkeep, commercialization, valuating the business prospect in Research and Development (R&D); esteeming R&D endeavors and organizing research activities, as well as supporting a valuation for loan guarantee. Subsequently, the quality and precision of IP valuations have turned into an essential focus of higher management of such organization.

However, the issues that arise in the method of valuation of IP were still hurdle towards getting the real value of IP. Few literature has discussed in accounting aspects such as Patrick (2009) and Nir Kossovsky (2002) who stated that accounting standards are basically trivial in representing the worth of IP in company's profile and IP are regularly under-valued, under-managed or under-exploited. In spite of the significance of IP, there was little co-ordination between the different professionals dealing with an organization's IP. In addition, the uncertainty value of IP has been a concern for investors to a company that has a high dependence on intangible assets. This concern as mentioned by Patrick (2009) and Nir Kossovsky (2002) was due to the traditional accounting methods which were not able to explain the value of volatile assets. Under this traditional accounting method,

the accountant only assign manufacturing cost only to products, and fails to allocate the other non-manufacturing cost that are related to that production for instance, administrative cost. Subsequently, the use of this method integrates inconsistency report on an asset, bringing in an investment turn out more risky.

This situation not only affects the acquisition of a maximum return of IP assets, but it can prevent the development of IP-based industries. This is because according to Wong (2012), one of the factors that prevent a deeper exploration of IP assets is due to the lack of IP assets recognition in the account statement and also no established standard valuation methodology to value the IP assets. Thus, the bankers mostly assume that IP-based financing is risky and they worry about the non-performing loan as well as difficulties in liquidating in the event of default.

In others, Robert (1995) stated that one of the challenges in producing the optimal value of IP assets is the lack of universally agreed of intellectual asset valuation model. Other literature explained that one of the factors are due to the properties that are on the IP itself as Grasenick and Low (2004) noted that the complex nature of IP assets led to a variety of methods and different approaches in determining the valuation. Complex traits found in IP assets as difficult to be managed, valued, and measured make this discipline is seen as not having a clear development path. Hence, due to non-uniformity of IP valuation standard, the question has risen on what are the current practices of IP valuation adopted in the industries?

WIPO Magazine (2003) and Martin et.al. (2006) has discussed on the widely recognized IP valuation methodologies which falls under three categories; the income method (with variations of relief from royalty methods and incremental income method), the comparison method and the cost method. However despite many methods can be adopted, there is no frameworks or guidance that shows how the valuation of IP can be conducted.

In Malaysia, Bernama (2012) reported that the Malaysian automobile manufacturer, Proton has purchased 7 engines technology coupled with 117 technology-related patents from the Malaysian oil company, Petronas. The transaction was completed at a cost of RM63 million. However, based on the statements made by Robert (1995) and Grasenick and Low (2004) above, the same question has arisen on the IP valuation methodologies practiced in Malaysia.

Jow-Ran Chang et. al (2005) also has stressed out the critical issues of IP valuation along with the increase of IP creation in the knowledge-based industries age. They connotes that little coordination within organization resulted complexity in obtaining maximum value of IP. Addition to their statements, accountants need to gather the real value of the intangible assets in their account statement despite difficulties in assessing the 'shrouded' value of IP, which stems from its intangible characteristics. Although some valuation approaches can approximately measure the assets' value, they usually leave out their latent value (Jow-Ran Chang et. al, 2005). Thus, the factors of importance in valuing IP has become another point of question.

Meanwhile, Wong Jin Nee (2012), a partner in Messrs Wong Jin Nee and Teo specialising in IP and technology said that the IP-based financing is not something new as it was introduced as early as 1884 in Western countries. However, this type of financing is considered subtle in Malaysia as over the years, financial institutions does not recognize the IPs since they are in intangible form and no proper valuation methods to value the property. To conclude her statement, generally there is no standard valuation methodology to value IP in Malaysia.

In Malaysia, SMEs assume an imperative part in supporting the country's transformation of economic and play roles as the motor that drives Malaysian economy. However since IP loan financing is still new in Malaysia as stated by Wong (2012) above, it may disrupts business development of such SME's in that case only have IP as their own asset.

While Financial Institutes (FIs) in Malaysia generally acknowledge the importance of IP to a company's success, none were willing to accept it as collateral for providing financing. Paving the way towards IP financing, Malaysia took further steps to facilitate the process by initiating the IP Valuation Initiative. Prime Minister Dato' Sri Najib Tun Abdul Razak, on 7th October 2010, at the 22nd MSC Malaysia Implementation Council Meeting has decided the Intellectual Property Corporation of Malaysia (MyIPO) to formulate an IP valuation model as provided in the National IP Policy where Multimedia Corporation Development (MDeC) could support in the formulation of the model. Realizing the importance of this mission, Prime Minister, in his budget speech, emphasized that efforts will be undertaken to enable SMEs to further expand their businesses by using intellectual property rights (IPR) as a collateral to obtain financing. Clearly the government committed in raising the IP as one of the new economic resources.

By view of the IP characteristics, it said that IP has many features that are synonymous with real estates. For example, intellectual property is an asset, and as such it can be bought, sold, licensed, exchanged, or gratuitously given away like real estate. Further, the intellectual property owner has the right to prevent the unauthorized use or sale of the property (Chapslinky *et. al.* 2002). The most noticeable difference between intellectual property and other forms of property, however, is that intellectual property is intangible. That is, it cannot be defined or identified by its own physical parameters (Anson, 1996).

Hagelin (2003) has stated that valuation of tangible or real estate assets has always been part of business and there exist well-developed rules for the same. However, valuation of IP is more uncertain than real estate valuation as IP assets are rarely comparable. Also there were no established markets for the exchange of IP assets. Even the terms and conditions of IP exchanges vary widely. Further, the details of IP exchanges, especially prices, are rarely available to the public.

The above factors have necessitated the development of methods of valuation, which, though in principle similar to those for real property, take into account the special characteristics of IP. Hence in the light of the fundamental similarities found between IP and real estate, the determination of the value of IP could be carried out using the same methods used in valuing real estate. However, what are the further characteristics that available on the real estate and its similarities with IP in order allows RE valuation methods to be applied to obtain the IP value?

IP is a complex and vast field to be explored. Therefore, this research will focus on one type of IP, which is Patent. According to Anderson (2003), the patenting system and process inventions are still of primary importance despite the protection of symbolic material and creative expression has increased the scope for copyrights and trademarks in the new economy.

Apart from that, Fauziah Raji et. al (2015) has stated that unlike valuation of RE which is conducted by professional valuers, it is ambiguous to clarify who is actually qualified to carry out IP valuation. Prominently, there are no professional IP valuers at present.

1.3 Research Questions

Based on the research problem discussed above, the following questions are posed:

1. What are the factors of importance in valuing Intellectual Property?
2. Are there similarities between Intellectual Property and real estate characteristics?
3. Can real estate valuation be adopted in valuing Intellectual Property?

1.4 Research Aims & Objectives

The aim of this research is to study whether the method of valuing real estate can be used to obtain values for intellectual property. In a move to achieve the aim of this study, there are two research objectives have been set, ie:

1. To evaluate the characteristics of Intellectual Property and Real Estate.
2. To assess whether Real Estate valuation methodologies can be adopted in valuing Patent.

1.5 Scope of Research

To achieve the objectives of the study, a few guidelines has been set as the scope of this research, which are in terms of geography as well as sample type. This research was only covered Malaysia.

The research sample was comprised of Patent practitioners and real estate valuers operating in Malaysia only. The study also takes into account the perspectives of Real Estate valuers and Patent practitioners which are as Patent agents, Patent managers and accountants, while the intellectual property involved is Patent, which is protected under Malaysian law only.

1.6 Significance Of The Study

The study to give a critical view to the public on the importance of intellectual property valuation and serve as a guide to owners of intellectual property and the financial institutions of the country in the interest of getting the maximum value for intellectual property.

This study to contribute a deeper understanding of the intellectual property valuation by the parties involved and can be used as a reference and further benefits real estate and intellectual property practitioners.

Finally, this study serves as a catalyst to the development of the intellectual property industry to the country and beyond to make Malaysia as one of the world's leading producers of intellectual property.

1.7 Research Methodology

Generally, the research methodology serves as a framework that can be accessed by any researcher in conducting research ranging from identifying problems to obtaining the result. In summary, the research methodology will usually form the basis or a pointer to the researchers in conducting research. In this research, the qualitative method of research is used.

To facilitate this study systematically, some stages were identified which are as follows:

1. First Stage

The first stage consists of the background of the study that describes the introduction, the statement of problems in the study, research objectives, scope of the study, research methodology, the importance of the study and chapter layout.

2. Second Stage

This stage is where the literature review such as the articles, seminar papers, journals, previous studies and reference books related to intellectual property and the property valuation were analyzed in providing an understanding of the conceptual framework and research issues. This review covers the definition, principles, functions and determination of the value of intellectual property and real estate.

3. Third Stage

This stage includes the process of data collection in this study, which involves the use of primary data and secondary data to achieve the objectives of the study. Primary data was obtained through interviews and the instrumentation adopted were mainly through both semi structured interviews, as well as focus group discussions. Secondary data is obtained from printed material such as findings from

previous studies, journals, reports, books, articles, websites and Internet materials which are related to the study.

4. Fourth Stage

Data and research findings were analyzed and summarized to answer the research objectives. These data are from interviews conducted on the intellectual property practitioners and real estate valuers. Analysis produced was then displayed in tabular form for the purpose of better understanding. To ensure that there is no ambiguity, data collected was verified, confirmed and sign by the respondents. Furthermore, all data was then transcribed directly from the interview and confirmed against tape-recording where allowed by the respondents.

5. Fifth stage

This stage is the last stage in this study in which the research results obtained are summarized and recommendations are submitted to the government parties, real estate valuers and owner of the intellectual property.

In order to illustrates the better understanding of research methodologies for this study, a flowchart 1.0 was presented in the next page.

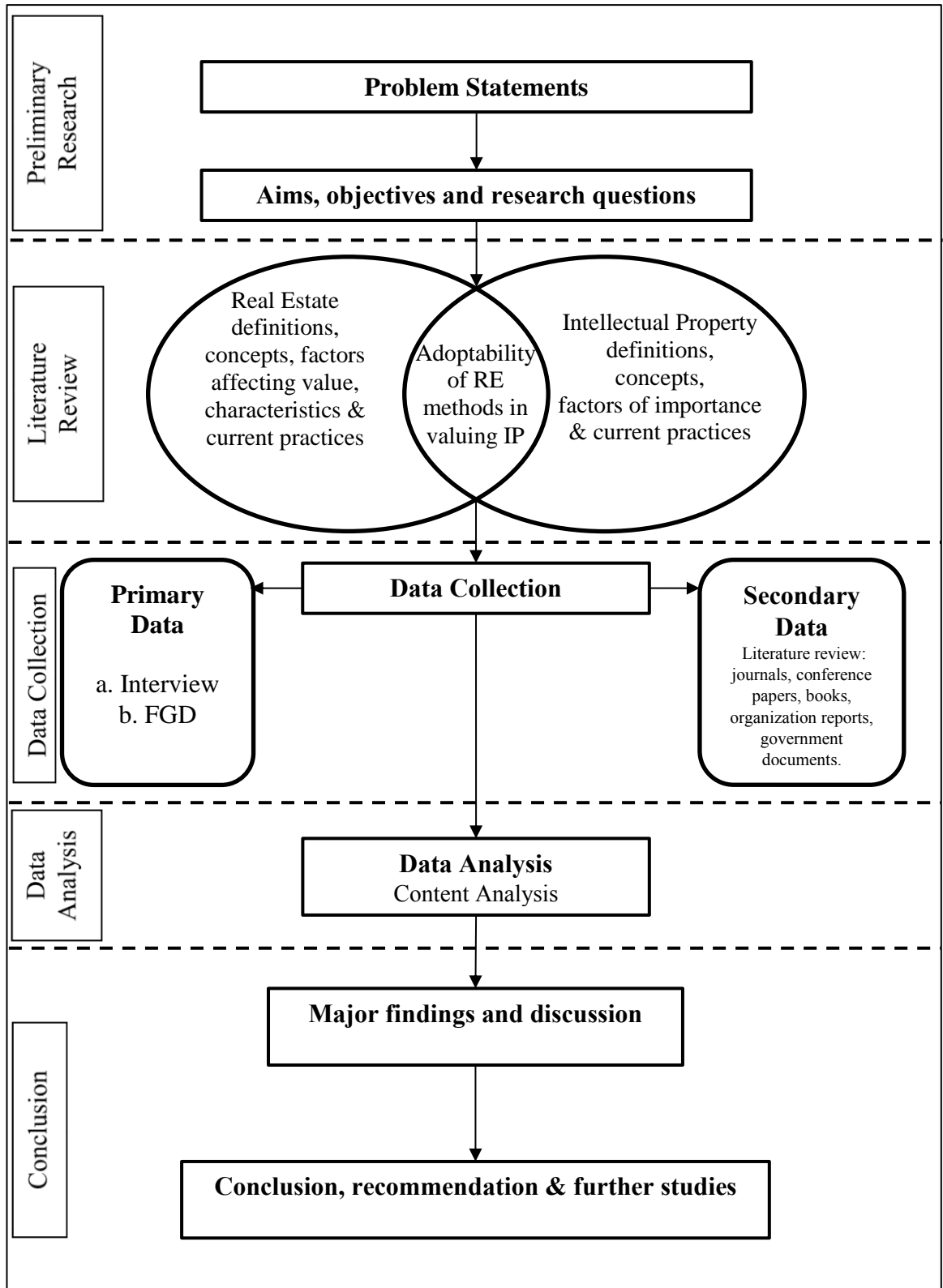


Figure 1.0 : Research Flowchart

1.8 Chapter Layout

Chapter layout has been designed as a guide to researchers to be able to conduct research in accordance with the designated order. In addition, it can prevent the occurrence of problems such as the scope of topics that come off the set. In this study, the layout of the chapter is as follows:

1. Chapter One: Introduction

This chapter discusses the introduction of the study topic, problem statement, objectives, scope of the study, the importance of research, research methodology and research arrangements.

2. Chapter Two: Intellectual Property and Real Estate in Malaysia

Discusses the theoretical study of the definition, concepts, and elements that are present in the intellectual property and real estate. In addition, this chapter also describes the factors that give and influence value and as well as the similarities and differences between real estate and intellectual property.

3. Chapter Three: Research Methodology

This chapter discusses the methodology used throughout the study. The research design were described here. It includes a detailed description of the determination of respondents, population and sample, data collection methods and procedures as well as methods of data analysis.

4. Chapter Four: Data Analysis

This chapter presents an analysis of data obtained from studies conducted to meet the objectives of the study. The analysis was based on the collection of data from interviews done. The approach used is qualitative approach. This important chapter in answer to the second objective of identifying the intellectual property valuation methods applied at present. It is through the perspective of intellectual property owners and real estate in the area.

5. Chapter Five: Conclusion

The last chapter is the conclusion and summary description of the findings of the study. Achievements of the objectives of the study are also described. In addition, a number of recommendations to the parties also raised.

REFERENCES

- Andersen, B. (2003) *The Neglected Patent Controversies And Corporate Value Creation*
- A.F. Millington (2013) *An Introduction To Property Valuation*
- Anson Weston (1996) *Valuing Trademarks, Patents And Other Intangibles In A Bankruptcy Environment*. American Bankruptcy Institute Journal. February, 1996
- Anand, B.N. and Khanna, T. (2000), *The structure of licensing contracts*, Journal of Industrial Economics, Vol. 48 No. 1, pp. 103-35.
- Bennet, D.E. (2002), *The power of patents and their strategic use*, Business North Carolina, Vol. 22 No. 10, pp. 64-6.
- Bhaduri, N. and Mathew, M. (2003), *Intellectual property management practices*, paper presented at the Portland International Conference on Management of Engineering and Technology, Portland, OR, 20-24 July.
- Boykin, JH and Ring, A A (1993) *The Valuation of Real Estate* (4th ed). New Jersey: Regent/ Prentice Hall
- Brooking, Annie (1996), *Intellectual Capital: Core Asset for the Third Millennium Enterprise*, International Thompson Business Press, New York.
- Chaplinsky, Susan and Payne, Graham, 2002 *Methods of Intellectual Property Valuation*. Darden Case No. UVA-F-1401. Available at SSRN: <http://ssrn.com/abstract=909734>
- Chiesa, V., Frattini, F., Gilardoni, E., Manzini, R. Pizzurno, E 2007, *Searching For Factors Influencing Technological Asset Value*

- Chiesa, V. (2001), *R&D Strategy and Organisation. Managing Technical Change in Dynamic Contexts*, Imperial College Press, London.
- Chiesa, V., Manzini, R. and Pizzurno, E. (2003), *The market for technological intangibles: a conceptual framework for the commercial transactions*, paper presented at the R&D Management Conference, Manchester, 7-9 July.
- Choi, W. and Weinstein, R. (2001), *An analytical solution to reasonable royalty rate calculations*, The Journal of Law and Technology, Vol. 41 No. 1, available at: www.idea.piercelaw.edu/articles/41/
- Epstein, R.J. and Marcus, A.J. (2003), *Economic analysis of the reasonable royalty: simplification and extension of the Georgia-Pacific factors*, Journal of the Patent and Trademark Office Society, Vol. 85 No. 7, pp. 555-83.
- Ernst, H. (1995), *Patenting strategies in the German mechanical engineering industry and their relationship to company performance*, Technovation, Vol. 15 No. 4, pp. 225-40.
- Fauziah Raji (2010), *Modes of Privatisation For Property Development Projects*, Philosophy Doctor Theses, Universiti Teknologi Malaysia
- Gaddy, W.E., Hart, R.E. (1993), *Real Estate Fundamentals*, 4th ed., Real Estate Education Company, Dearborn, MI.
- Geschwender. A, 2009 *Real Estate Principles and Practices Workbook* Cengage South-Western
- Goldscheider, R. (1995), *The negotiation of royalty and other sources of income from licensing*, The Journal of Law and Technology, Vol. 35 No. 1, available at: www.idea.piercelaw.edu/articles/35/

- Grasenick, K. and Low, J. (2004), *Shaken, not stirred: defining and connecting indicators for the measurement and valuation of intangibles*, Journal of Intellectual Capital, Vol. 5, pp. 268-81.
- Granstrand, O. (1999), *The Economics and Management Of Intellectual Property*, Edward Elgar, Cheltenham.
- Harvey J and Jowsey E (2004) *Urban Land Economics*, 4th ed, Hampshire: MacMillan
- Harrison, S. and Rivette, K. (1998), *The IP portfolio as a competitive tool*, in Harrison, S. and Rivette, K. (Eds), *Profiting From Intellectual Capital Extracting Value From Innovation*, John Wiley & Sons, New York, NY, pp. 119-28.
- Ted Hagelin, *Competitive Advantage Valuation of Intellectual Property Assets: A New Tool for IP Managers*, 44 IDEA: The Journal of Law and Technology 79 (2003).
- Houghton, J. and Sheehan, P. (2000), *A Primer on the Knowledge Economy*, Centre for Strategic Economic Studies, Victoria University, Melbourne.
- Ismail Omar (1992) *Penilaian Harta Tanah*, Dewan Bahasa dan Pustaka, Kuala Lumpur
- Edward A. Pisacreta and Kenneth A. Adler *Intellectual Property Licensing: Forms and Analysis*, by [Richard Raysman](#),. Law Journal Press, 1998–2008. ISBN 973-58852-086-9
- IP4Inno project (2008), *Valuation of intellectual property*, module 4.A. in the Students Handbook provided by the Hungarian Patent Office, available at: www.ip4inno.eu (accessed 9 May 2008).
- Jones, Ian (1997), *Mixing Qualitative and Quantitative Methods in Sports Fan Research, The Qualitative Report*: 3 (4) 2-12

Jones, T., Norris, M. and Solomon, I. (2002), *Strategies for maximizing value from intellectual capital in a technology-driven business*, The Licensing Journal, Vol. 22 No. 6, pp. 1-7.

Jow-Ran Chang, Mao-Wei Hung, Feng-Tse Tsai, (2005) *Valuation of intellectual property: A real option approach*, Journal of Intellectual Capital, Vol. 6 Iss: 3, pp.339 – 356

Kamien, M. and Tauman, Y. (1986), *Fees versus royalties and the private value of a patent*, The Quarterly Journal of Economics, Vol. 101 No. 3, pp. 471-92.

King, K. (2001), *The value of intellectual property, intangible assets and goodwill*, Thomson Scientific free resources, available at: <http://scientific.thomson.com/free/ipmatters/acctecon/8199544/>

Kossovsky. N, (2002) *Fair Value of Intellectual Property* Journal of Intellectual Capital, Vol. 3 No. 1, 2002, pp. 62-70.

Lagrost, C., D. Martin, C. Dubios and S.Quazzotti (2010). *Intellectual Property Valuation: How To Approach The Selection Of An Appropriate Valuation Method*. Journal of Intellectual Capital, Emerald Group Publishing Limited

Marlon Omar Lopez Zapata, (2009) *Intangible Assets Valuations* Ph.D Thesis Tulane University

Mendi, P. (2003), *The structure of payments in technology transfer contracts: evidence from Spain*, paper presented at the International Industrial Organization Conference, Boston, MA, 4-5 April.

Malaysian Valuation Standard

National Land Code 1965

- Mark A. Lemley, *Property, Intellectual Property, and Free Riding*, Texas Law Review, 2005, Vol. 83:1031, footnote 4
- Park, Y. and Park, G. (2004), *A new method for technology valuation in monetary value: procedure and application*, Technovation, Vol. 24, pp. 387-94.
- Pagourtzi. E. Assimakopoulos. V. Hatzzichristos. T. French. N (2003) *Real Estate Appraisal: A Review of Valuation Methods*, Journal of Property Investment & Finance, 21:4, 383-401
- Patrick H Sullivan, 2009 *Intellectual Asset Management Magazine*, March/April Pg. 31-36
- Peter K, Yu (2007). *Intellectual Property and Information Wealth: Copyright and related rights*. Greenwood Publishing Group. p. 346. ISBN 978-0-275-98883-8.
- Porter, P.D., Sheckler, V.F. and Grace, H.I. (2003), *Negotiating biotechnology strategic alliances*, The Licensing Journal, Vol. 23 No. 5, pp. 1-9.
- Rahn, G. and Scheer, M. (1993), *Patent strategies of Japanese companies*, excerpt from: Gewerblicher Rechtsschutz in Deutschland und Japan, 4, Zentrum für Gewerblichen Rechtsschutz, available at: www.gewrs.de/
- Reilly R. F, Schweih, R.P, 1998, *Valuing Intangible Assets*
- R.H. Pitkethly, *The valuation of patents: A review of patent valuation methods with consideration of option based methods and the potential for further research*. Available at: www.oiprc.ox.ac.uk/EJWP0599.html, 1997.
- Robert F. Reilly, *Economic Analysis Of Intangible Assets*. American Bankruptcy Institute Journal. April, 1995

- Sanjoy Bose, Keith Thomas, (2007) *Valuation of intellectual capital in knowledge-based firms- The need for new methods in a changing economic paradigm* Management Decision, Vol. 45 Iss- 9, pp.1484 – 1496
- Scarrett, Douglas (1991), *Property Valuations: The Five Methods*, 1st edn, E. & F. N. Spon, London.
- Simon, Stokes (2001). *Art and copyright*. Hart Publishing. pp. 48–49. ISBN 978-1-84113-225-9.
- Stewart, T.A. (1997), *Intellectual Capital*, Nicholas Brealey Publishing, London
- Sullivan, P.H. (2000), *Value-Driven Intellectual Capital*, John Wiley & Sons, New York, NY.
- Teece, D.J. (1986), *Profiting from technological innovation: implications for integration, collaboration, licensing and public policy*, Research Policy, Vol. 15, pp. 285-305.
- Thumm, N. (2001), *Management of intellectual property rights in European biotechnology firms*, Technological Forecasting and Social Change, Vol. 64, pp. 259-72.
- T. Hufker, F. Alpert, *Patents: A managerial perspective*, Journal of Product and Brand Management 3 (1994) 33–54.
- Sommer, E.M. (2002), *Transactions exploiting intellectual property*, The Licensing Journal, Vol. 22 No. 7, pp. 18-28.
- Warnick, S. (2000), *Patent strategies help high-tech firms protect their technology*, Capital District Business Review, 4 December, available at: www.amcity.com/albany/

World Intellectual Property Organisation. "*Understanding Copyright and Related Rights*" (PDF). WIPO. p. 8. Retrieved August 2008.

Yu-Jing Chiu, Yuh-Weh Chen (2007) *Using AHP in patent valuation*

Wong Jin Nee (2012), *Tea Talk IP System & Valuation*

T. Hufker, F. Alpert, *Patents: A managerial perspective*, *Journal of Product and Brand Management* 3 (1994) 33–54.

M.J. Ferrantino, *The effect of intellectual property rights on international trade and investment*, *Weltwirtschaftliches Archiv* 129 (1993) 319–323.

R.L.Parr, G.V. Smith, *Quantitative Methods of Valuing Intellectual Property*: M.Simensky, L.G.Bryer (Eds.), *The New Role of Intellectual Property in Commercial Transactions*, Wiley, New York, 1994, pp. 39–68.

Geschwender, Arlyne. *Real Estate Principles & Practices*. Cengage Brain.com, 2009.

Elli Pagourtzi, Vassilis Assimakopoulos, Thomas Hatzichristos, Nick French, (2003) *Real estate appraisal: a review of valuation methods*, *Journal of Property Investment & Finance*, Vol. 21 Iss: 4, pp.383 - 401

Malaysia Budget, 2013 www.pmo.gov.my

Weinstein, R. and Huang, S. (1999), "*Valuing patents and intangible assets in the semiconductor industry*", *The Licensing Journal*, Vol. 19 No. 2, pp. 8-13.

Zambon, S., 2003 Wp4- *Accounting, Financial Analysis and Audit in the intangible economy*, Final Report