Characteristics of Effective Investment Evaluation Methods for Servicescape Intangible Value Quantification

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ABSTRACT

Servicescape upgrades are often regarded as improvements to the intangible aspects of business performance, such as an increased sense of place, levels of comfort, safety, pleasure, inspiration, and satisfaction for both customers and employees. This presents a significant challenge for facilities managers who must convince the top management, particularly the finance department, that a proposed service scape upgrade will yield financial benefits for the business. Although investment return evaluation methods that are purportedly able to quantify intangible values exist, these methods are typically designed to measure only the monetary costs and benefits associated with a project. As a result, they may not fully capture the intangible value inherent in service scape upgrading investments. In response to this gap, the authors are conducting a research to develop an anticipated investment return calculation theoretical model for service scape upgrades based on the quantification of intangible values. This paper presents a part of the findings from the first phase of the research which focuses on identifying the essential characteristics needed for an investment return evaluation method to quantify service scape intangible values. A mix of qualitative and quantitative approach was adopted, starting with the identification of the characteristics from the literature. Twelve experts that included academics and practitioners in economic valuation, non-market valuation, and methodologies for quantifying intangible values were then interviewed to assess whether the identified characteristics are indeed required to quantify service scape intangible values. The interview data were analysed progressively using content analysis, frequency and Relative Importance Index until data saturation was achieved. The result indicates that qualitative metrics, and long-term perspective are the most important characteristics needed for an investment evaluation method to quantify service scape intangible values. These findings will help guide the selection of appropriate investment evaluation methods to be incorporated into the anticipated investment return theoretical model for service scape upgrades. This in turn may assist decision-makers alike to determine the investment return of a proposed service scape upgrading project in monetary sense despite the intangible nature of the project's values.

Keywords: service scape, intangible value, investment return, evaluation method, facilities management

INTRODUCTION

Facilities management (FM) is the enabler to the core business of an organisation. This basically means facilities managers are responsible to facilitate the core business of the client organisation by creating the most conducive work environment. To provide facilities that can enable the business of the client organisation, apart from the provision of important support services, the physical environment or better known as service scape should be able to accommodate not just the needs of the business operation but also the needs of the end-users.

Servicescape is a combination of various elements that influence a customer's perception of the service. Servicescape is defined as man-made controlled space where the physical facilities may have a substantial effect on consumer satisfaction and are manipulated and designed to facilitate business services [29]. Elements of service scape include exterior facilities (i.e., landscape, exterior design, surrounding environment, parking, signage, etc.) and interior facilities (i.e., music, layout, equipment, air quality, thermal conditions, interior design, etc.) [68, 38, 86, 81, 92].

Aspects of service scape include ambience (from air quality, temperature, noise, music, scents, lighting); spatial

layout and functionality (space arrangement, ergonomics, and functionality of equipment and furniture); and signs, symbols, and artifacts that connect, communicate, and convey information to users through graphic symbols, photos, images, floor coverings, and corporate artworks [36, 91, 56, 79]. Services capes render various intangible values that impact people in many ways, categorised as pleasure, arousal, and dominance [64, 49, 47]. These service scape intangible values stimulate various psychological and behavioral responses that include happiness, enjoyment, satisfaction, excitement, confidence, the sense of being in control, and the state of feeling comfortable and at ease.

Arguably, investing in the provision of well-performing service scape has been recognised as having positive impacts on business performance. The narrative behind this belief is that well-performing service scape will lead to employee productivity, customer satisfaction, and improved organisational reputation, which eventually result in increased business profit. Koay et al. [51], Anh and Thao [6], and Chakraborty and Kamra [12] have all acknowledged the positive impact rendered by a well-performing service scape on business profit and performance. Again, narratively this belief is appealing and sounds very logical. Of course, a better work environment means happier workers, which leads to increased productivity and work quality, which then leads to customer satisfaction, hence improved business profits and performance. This is the fundamental idea behind Robert Kaplan's and Edward Norton's Balanced Scorecard model. However, applying this idea to project business profit and performance analytically is not that simple.

Unlike anticipating investment return based on tangible values, anticipating investment return based on intangible values is very difficult. The anticipated outcome of replacing conventional light bulbs with energy-saving ones in an office for example can be easily determined. Perhaps the energy bill can be reduced by 30%. In other words, tangible values are highly objective and investment return based on tangible values can be easily quantified and anticipated. Quantifying and anticipating investment return based on intangible values however is a whole different ball game. How does one anticipate the investment return of say changing the colour scheme of a room to improve ambience which in turn may improve customers' emotion and satisfaction? How does comfort analytically equate to business profit? Mendes [62]; Gyorgy, Vintila, and Gaman [35]; Mendes et al. [63]; Gunawardena et al. [34]; Rajurkar [78]; Schroeder-Strong et al. [80] are all in agreement that intangible values are extremely difficult to quantify or be anticipated.

In the effort to improve workplace performance, facilities managers are often required to make decisions on service scape upgrading. This of course would require the facilities managers to come up with not only what service scape to upgrade and how, but also how much it would cost to upgrade. This is when the facilities managers' proposal be scrutinised and often challenged by the top management, particularly the finance department. What will the Return on investment (ROI) be? If the organisation were to invest say RM500,000 to improve ergonomics and comfort in the office, how much would the organisation get back in return? This question needs to be answered and answering it narratively is not going to be convincing. A monetary figure needs to be provided.

Investment return calculation methods such as Social Return on Investment (SROI), Cost-Benefit Analysis (CBA), Elimination Process, Comparative Analysis, Scenario Analysis, Weight of Estimation, Revealed Preference, Stated Preference, Hedonic Pricing Method, Travel Cost Method, Contingent Valuation Method (CVM), Willingness to Pay (WTP), Willingness to Accept, Cost Approach, Income Approach, and Market Approach have been suggested as viable methods to anticipate financial returns based on the quantification of intangible values, mostly for investments in information systems (IS), social development programmes, and environmental conservation efforts. It has been suggested by Purwita and Subriadi [77] and Ahlin [4] that these methods can be used to anticipate the ROI of investing in intangible assets such as information systems by quantifying user satisfaction and increased morale. The problem however, is the inability of the methods aforementioned to handle complex intangible data. Intangible value data come in multiple layers and need to be connected to both qualitative and quantitative data for it to bear any meaningful information. This is where the investment return calculation methods mentioned above fall short because they are originally designed to calculate tangible data which are more straightforward.

The shortcomings as discussed in the previous paragraph can be clearly seen in several cases. Kennedy & Phillips [48] conducted an SROI analysis of an urban green space focussing on the intangible outcomes such as sense of

social belonging and loneliness alleviation. While some financial proxies (e.g., comparing outcomes to the cost of stress management sessions) were assigned, the analysis was still unable to reveal the full extent of these intangible impacts. This highlighted the challenges with attempting to monetise aspects of benefits including for example, enhanced community spirit and wellbeing, as they do not lend themselves to exact economic valuation [40]. The Contingent Valuation Method (CVM) was used to study the Kalamata Dance Festival in Greece and find out how much visitors are willing to pay. Despite being able to give some insight into the value of culture to the economy, it was limited in its efficiency, given that responses were subjective. The limitless, outside-the-scope aspects, like increased cultural pride or community cohesion [44], were beyond the scope of willing-to-pay surveys (willing to pay for what?) clear estimation of additional benefits. Research on the Sarbanes-Oxley Act (SOX) reveals the constraints of CBA, particularly in financial regulation. It was easier to put a price tag on compliance costs, but benefits such as reduced fraud and greater investor confidence were much more difficult to quantify. This resulted in subjective estimates characterised by a wide distribution and ultimately hindering reliable assessments of net effects. The analysis showed how difficult CBA is to include non-market effects, such as improved corporate governance and increased public trust into its framework [14].

A single magic formula that can anticipate the investment return of service scape upgrade based on intangible values is unlikely. This is due to the complexity of the intangible values themselves where the values must firstly be represented by financial proxy values for the intangible values to have any analytical meaning [30, 73]. This means, anticipating the investment return of service scape upgrades based on the quantification of intangible values will inevitably involve the amalgamation of various methods and layers of processes. Hamilton et al. [37] similarly demonstrated layers of processes involved in the quantification of investment return of 'free of charge' hotel amenities such as free luggage pickup service, in-room internet access, and free bottled water. This suggests that anticipating the investment return of service scape that is based on the quantification of intangible values is not a straightforward exercise.

Researches pertaining to the quantification of intangible values are not new. However, they mostly approached the problem by utilising investment return calculation methods originally designed for tangible values to quantify intangible values. This leads to accuracy issues due to the complexity of the intangible value data [28, 11, 41]. This is why, despite the availability of several past researches on the quantification of intangible values, new research on the subject matter is still being carried out. The aim is not to come up with a method or utilise existing investment return calculation methods to quantify intangible values, as that has been shown to be insufficient. Instead, the goal is to acknowledge the complexity of intangible values and come up with a model that can improve understanding of the data, how they are connected, and how they can be used to anticipate the investment return [28, 40, 60, 31]. This approach aligns with the need to reduce the information complexity of intangible values, which often obstructs accurate forecasting [23]. Furthermore, by structuring frameworks to reflect the relationships among diverse intangible elements, firms can reduce the information complexity of intangible values [28], thus minimising forecasting errors, which ultimately leads to more informed decision-making [25].

The authors carried out a preliminary survey from October 2022 to December 2022 involving facilities managers and decision-makers across various business industries in Malaysia that included hotels and accommodations, food and beverage services (including a famous fast-food company), shopping complexes, and healthcare services. The mixed-method approach was employed by integrating semi-structured interviews and questionnaire surveys. Purposive sampling was used for the selection of the participants, ensuring that they represent the key sectors that frequently engage in service scape upgrades. By engaging people from these sectors, the authors hoped to be able to understand how different organisations handle intangible aspects of their environments (such as customer experience, ambiance, or emotional value) in their investment strategies.

Thirty respondents were included, representing businesses from multiple states across Malaysia, allowing for some generalisation within the country's business landscape.

Interviews were conducted to gather in-depth qualitative insights into the decision-making processes and a brief questionnaire survey (structured survey with close-ended and open-ended questions) was carried out to complement the interviews, ensuring that statistical patterns could be identified. The data was analysed using simple frequency calculation for the quantitative part, and content analysis for qualitative insights. These

complementary methods ensured both a broad overview of trends and deeper insights into the challenges faced by managers.

The results show that when it comes to anticipating the investment return of service scape upgrades based on intangible values, 71% of the respondents stated that they do not know how, and 29% stated that they are not aware that the investment return of upgrading services capes to improve intangible values needs to be anticipated. The findings of the preliminary survey suggest that the business industry does not know how to anticipate the investment return of services cape upgrades based on the quantification of intangible values despite the existence of various methods that have been suggested as viable for anticipating investment returns based on intangible values. This finding is in alignment with various sources in the literature that state the same situation [34, 30, 77, 62].

The inability to predict investment returns based on intangible values of services cape upgrades (as shown by the result of the preliminary survey) would lead to decision-making problems (as they do not know how to equate the intangible values to financial benefits) and companies losing their competitive edge as the return that can be generated from intangible values such as conducive work environment, increased level of comfort, and improved reputation are not well-appraised [61]. This subsequently could lead to companies distributing resources inefficiently and making poor investment decisions, which would lead to the failure of the companies to gain from market trends that put emphasis on intangible values (such as sustainability and stakeholder engagement) which has been determined in researches on non-financial valuation in the context of the environment and business [62, 2]. Moreover, such inability to forecast investment yields as a result of too optimistic quantification of intangibles benefits from services cape leads to financial myopia depletes organizations' responsiveness towards future trends [54, 22]. Such gaps can also harm ties with investors and stakeholders since non-financial metrics are gaining more importance [57]. Both tangible and intangible measures must be integrated into decision-making processes in businesses at all levels, while benchmarking and sharing information across industries should help to raise awareness on required trainings [22, 3].

To address the problems discussed previously, the authors are currently developing an anticipated investment return calculation theoretical model for services cape upgrades based on the quantification of intangible values. The theoretical model consists of 3 major components, namely the intangible value quantification component, the cost data component, and the investment return calculation component. The intangible value quantification component is the first part of the model that is addressed in the study. In this part, the essential characteristics needed for an evaluation method to quantify intangible values are determined. This will help the researchers to later determine which evaluation method is the most appropriate to be included in the model. The next part of this write will discuss the characteristics discovered the various literary sources.

LITERATURE REVIEW

Investment return estimates should include but are not limited to, the usual quantifiable financial metrics. A holistic approach is to include both financial and non-financial aspects, which provides 360-degree visibility of value creation across time. Such equilibrium creates an environment where choices are made not only on the basis of short-term financial profitability but also considering wide-ranging long-term impact to stakeholders and society. The characteristics required for an investment evaluation method to quantify services cape intangible values are:

- Inclusion of qualitative metrics

- Long-term perspective

- Use of proxy metrics

- Ability to handle uncertainty and risk

- Linkage to tangible outcomes

- Flexibility and adaptability

- Integration of non-monetary benefits

- Stakeholder involvement

A. Inclusion of Qualitative Metrics

Servicescape intangible values are rather complex in nature, including comfort, safety and security, ambience, employee morale, and customer satisfaction, which calls for empirical qualitative assessments to be integrated into valuation frameworks [83]. Such kinds of elements, which play an important role in organisational performance, are hard to measure by financial parameters. There is growing research showing that qualitative information should supplement financial information to a greater degree to provide a clearer picture of long-term value creation [25, 93].

Financial results linked to service scape intangible values probably get mediated across time by other organisation capabilities. For instance, a temperate physical-work-environment generates employee morale, lifts productivity and innovation, while better comfort and ambience increase customer loyalty, which brings in sustained revenue [93]. These qualitative considerations embody the nature of organisational identity and stakeholder relationships, hence having a pivotal role in human behavioural economics, i.e., strategy decision-making.

Research shows firms that closely monitor qualitative measures with instruments like stakeholder surveys, customer feedback, and employee engagement assessments achieve higher alignment of their intangible investments with long-term focus [22, 84]. These practices make sure that stakeholder sentiments, which are usually not captured in financial analysis, are brought to the table so that leadership decisions reflecting them lead to sustainable business outcomes. Furthermore, not only does combining qualitative data signal problems that need to be addressed earlier. For example, if turnover rates are concerning, having tech tools to monitor employee satisfaction allows you to predict who might give their notice next before it happens, which then helps reduce the cost of hiring and training someone to replace them. In the same vein, monitoring brand perception enables proactive marketing strategies that prevent reputational damage.

However, there are several issues that make the direction of qualitative assessments more challenging in investment frameworks. One big problem is subjectivism. The qualitative data is personal and contextual according to setting making it difficult to standardise. A lack of a subjective definition often leads to differences in how subtle or intangible values are assessed and understood by organisations [89].

Quantifying qualitative outcomes is a challenge. Proxy metrics are good, but often superficial with thin data on stakeholder sentiment. A heavy reliance on these proxies could encourage a tick-the-box approach, failing to capture the underlying experiences of employees or customers [41]. This research indicates that organisations should move towards multi-layered qualitative assessment tools (e.g., open-ended interviews, focus groups) to complement standardised metrics [84].

The move toward measuring intangibles is apparent across all industries. In the technology industry, companies like Apple and Google frequently conduct surveys to understand brand equity and employee engagement, using these insights as input to strategic actions that help them maintain a sustainable competitive advantage [93]. Just as pharmaceutical companies consider what customers want during the R&D process in order to develop new products [25], these signal patients' desires directly by taking into account medical knowledge. It is therefore logical that a similar approach be adopted in the quantification of services cape intangible values. Measuring the intangible values of services cape will need to be measured by assessing and evaluating how employees and customers perceive and value the benefits that are delivered through it.

It is important to use evaluation methods that incorporate qualitative metrics, as the full intangible value cannot be measured in currency terms alone. It is easier said than done but those organisations that do are ahead of the game! With the world in constant transition, from tangible to intangible-driven industries, measuring and

managing qualitative outcomes will become more urgent for sustainable success.

B. Long-term Perspective

A long-term perspective is needed in order to adequately assess intangible values. Returns on services cape investments often come in over long time horizons. While tangible investments often have instant or near-term payoffs, the advantages of most intangible ones accumulate over time and yield results only after persistent commitment. These investments result in benefits not just in the present, but for years to come. Thus, organisations need to adopt financial evaluation methods which reflect this factor to be able to match the full image of these investments.

The neglect of the long term can also cause underappreciation of intangible assets because short-term metrics miss their cumulative impact. For example, when a private university invests in smart-classrooms, it may find it difficult to obtain increases in profit at the onset of its investment, but cumulative trust and confidence (among students) that form over time entice them to come back for more, leading to a better competitive position years after [25].

Because standard financial models are built on immediate returns, they often fail to capture the potential value of intangible investments. One way companies are overcoming this limitation includes an the adoption of extended time horizon models that match the nature of management action and intangible value creation. Multi-year forecasting techniques enable organisations to capture gains that accrue over time, providing a clearer understanding of the true return on investment [22].

A key innovation here is the extension of capitalisation periods to reflect the reality that intangibles have longer lifespans. Eisfeldt at al., [25] recommend that depreciation schedules should be reconsidered in industries where intangible investments form the majority of company assets, as this value is not realised immediately. This will allow firms to appropriately reflect the contributions of intangible investments to long-term profits.

A big part of the problem with taking a long-term view is it requires a long-term view. It focuses on the impact of market forces, changes in consumer preferences over time, and regulatory considerations that affect investments in intangible assets such as innovation and brand-building activities [93]. To address this problem, companies need to adopt scenario-based planning and ensure flexibility within their valuation models to accommodate a variety of future pathways. A recent study shows how valuation models that are flexible and based on various different scenarios allow companies to easily adjust their strategies. As a useful tool for risk mitigation, strategic flexibility and improved decision-making, scenario-based planning allows firms to explore what multiple futures may hold [67].

Another challenge is the difficulty to assign financial values amounts on non-monetary benefits. The effects of something like improved workplace ergonomics on productivity are difficult to quantify in the short term, but they create a direct business impact over time. More recent studies indicate that these long-term benefits should not be the goal themselves but rather proxy metrics for behaviours, such as employee retention rates or indices for customer loyalty [22].

Long-term perspective is important for proper assessment of services cape intangible values, yet that is the problem because organisations that understand how intangible value is built up gradually and cumulatively over time are able to make far more informed investment decisions. The failure of traditional metrics to capture the realities of value creation in this new age calls for companies to move beyond and adopt extended forecasting horizons, revised depreciation schedules and scenario-based planning into their valuation frameworks.

C. Use of Proxy Metrics

Intangible values are important drivers of business performance in the modern world, but hard to measure directly. This is where proxy metrics are a useful as they provide a way to approximate the value of the intangibles through indicators that can be quantified.

By providing proxy metrics that connect intangible outcomes with measurable data, organisations are gaining

valuable insights for more strategic decision-making. For instance, many proxy measures for hard-to-find qualitative metrics could be in the form of employee retention rates. When employees are happy at their jobs, they are most likely going to stick around [61]. Analogously, customer satisfaction measures like Net Promoter Scores (NPS) are broadly embraced as indicators of consumer loyalty, demonstrating potential for repeat purchases and brand advocacy [25].

Proxy metrics are critical to long-term value creation particularly as organisations are increasingly dependent on intangibles values. With traditional financial measures alone, we are unable to capture these values [93]. This is the void that proxy metrics fill, as they help contextualise qualitative outcomes and frame them into data-driven results.

Companies employ financial proxies to ascribe value beyond internal metrics for non-monetary benefits such as social and environmental contributions. For instance, carbon offset credits are financial representations of reductions in greenhouse gas emissions [22], as they help to turn sustainability efforts into valuable commodities. In a similar fashion, organisations undertaking corporate social responsibility (CSR) initiatives often rely on proxies like media sentiment analysis or community engagement scores to arrive at an estimate of their social impact [42]. Such financial proxies embed the non-financial benefits into valuation models and financial reporting frameworks in alignment with more macroeconomic business objectives.

Proxy metrics obviously have an important role to play in every sector. Customer engagement metrics are also monitored by companies in the retail industry so that businesses can understand what motivates a consumer to purchase and adjust loyalty programs accordingly [61]. These are all great illustrations of how proxy metrics give valuable information and help align operations with strategy. One can find examples of how proxies shape decision-making in the technology sector, too. Firms like Google and Apple measure their workplace culture by employee engagement surveys and internal retention counts to enable alignment between goals of innovation strategy and productivity [25]. These companies show that careful use of proxy metrics improves their capacity to assess the contribution of intangibles on operational performance.

Proxy metrics for international capital markets have recently received additional scholarly emphasis. A 2022 mathematics study by Dancaková et al. analysed the impact of intangible assets, including innovation, brand equity, and intellectual property, on company valuations. The results show that companies with successful mergers regarding intangible value proxies enjoy better trust from investors and increased market capitalisation [22].

Although proxy metrics give us more information, they also introduce complications. A frequent challenge is getting the proxies to tell the right intangible story about what they are fundamentally worth. For example, if retention rates are used as an indicator for employee engagement (as it might highlight the impact of the physical workplace on morale), there is the possibility that other contributing factors (cultural or organisational factors) may be overlooked [93]. Additionally, companies need to periodically refresh their proxies in accordance with market dynamics to make sure that the metrics remain applicable and meaningful over a long period [22]. Instances of challenges encountered with proxy measures include:

▪ *Retention rates as a proxy for employee Engagement:* One of the biggest problems here is that companies often using retention rates as a proxy for engagement. High retention rates may reflect good morale, but it may also reflect a lack of economic options both for the firm and among employees. This misunderstanding could cause companies to neglect important intangible aspects such as work environment, quality of leadership or culture [93].

▪ *Customer Satisfaction (CSAT) and Net Promoter Score (NPS):* NPS has become the most ubiquitous proxy for customer satisfaction but a misleading one. For example, having high NPS doesn't mean you will tend to have repeat purchases, or long-term loyalty. This particularly true in situations where the customers are bound by contracts or have very limited options. Similar to the findings of Grønholt and Martensen as reported by Köse [53], such as NPS should be complemented by other indicators that can convey a more complete picture of customers' behaviour.

▪ *Workplace productivity Metrics:* Proxy workplace productive measures such as the number of tasks completed are often used. According to Brynjolfsson & McAfee, cited in Köse [53], these metrics can overlook other aspects of productivity (e.g. quality of output or innovation), which may influence managers to focus solely on quantity and not on value at the firm level.

▪ *Environmental impact metrics:* There have been instances where companies use environmental impact metrics or carbon offsets from sustainability reports as a proxy that reflects responsibility and awareness towards the environment. The use of these types of metrics however has been argued to be misleading as other ecological impacts, e.g., the potential loss of biodiversity [53] or water consumption [54], are not included, limiting the overall integrity of environmental assessments.

To get around these shortcomings, companies are urged to diversify their metrics and use multiple proxies of complex intangible outcomes since no single proxy is necessarily accurate and validate these proxies either based on stakeholder feedback or empirical testing [84]. Proxy metrics are the avenue through which we quantify intangibles bridging the non-financial to financial pathway. Aggregating right proxies through writing intangible assets into your strategy will help align them with the business goals delivering long-run value creation to investors and stakeholders. Reviewing and adjusting these metrics perpetually will better help companies actually see the ever-changing face of the intangibles.

D. Ability to Handle Uncertainty and Risk

Intangible investments are uncertain in their results because they depend on the whims of market dynamics and other variables outside of firm control. This uncertainty requires a flexible approach to valuation. There exists some recent literature [85, 27, 14, 13, 58] that supports both the integration of scenario-based planning with real options theory, thereby enabling the assessment of investment decisions under uncertainty.

Organisations are using scenario-based planning to map out a spectrum of what could happen, preparing themselves to bend (but not break) in ever changing ecosystems. This approach allows companies to envision different pathways, be it changing consumer behaviour, technological disruption, or economic upheaval, and adapt through scenario planning [61]. Embedding scenario planning in decision-making processes enables companies to anticipate risks, while aligning investments with long-term objectives.

For instance, real options analysis provides the flexibility to delay, expand or abandon projects based on what happens in the marketplace. This approach is especially beneficial to industries where the lead time between R&D investment and revenue generation (in human years) is measured in dog years, like pharma and tech. As Chronopoulos's [15] research highlighted, operational flexibility, where firms can stop and restart projects, helps them reduce risk from huge capital investment.

Specifically, firms that implement real options frameworks ware better equipped to handle uncertainty because their frameworks valued decision-making flexibility This can mainly be observed in industries such as energy, where companies need to make decisions on investments and use the real options approach to value investment projects with an option to wait for a favourable market condition prior to investing [16]. Moreover, brand investments are better suited to flexible strategies because they allow firms to adjust their approach in response to changing consumer preferences and competitive conditions.

When companies are being disrupted by economic cycles, those that have embedded some flexibility into their models are not only at the top of value creation, they also face much less volatility [61]. Incorporating flexibility into investment evaluations enables firms to pivot quickly when market dynamics change, minimising potential loss and maximising revenue from new investments."

While this is advantageous, real options and scenario-based planning needs to be used with prudence and expertise. A central difficulty lies in the challenge of estimating probabilities among scenarios for uncertain quantities. These methods require companies to invest in data analytics and forecasting tools [15]. Moreover, decision-makers have to constantly revise their assumptions in light of new evidence and contextual shifts.

Since the risk and uncertainties involved in the intangible part of investments are very hard to define, organisations need to adopt flexible valuation methods to mitigate these uncertainties. In highly complex environments, scenario-based planning and real options analysis become powerful tools for providing insight into how firms can better align their investment moves to long-term strategic goals. Given that many industries will continue to be reliant on intangible assets, the ability to evaluate risks via adaptable mechanisms is one of the cornerstones of enduring business longevity.

E. Linkage to Tangible Outcomes

Assets that are more difficult to measure such as employee and customer satisfaction, reputation and a conducive working environment are essential for long-run financial success. While these are non-financials assets, studies have shown they correlate highly with real business results, including increased productivity and cost savings and revenue.

Past studies show improving service environments return both productivity and turnover at less cost over time from human investments in morale and satisfaction. Xu and Liu [94] demonstrate that the productivity of a firm is dependent on the well-being of employees. The research shows how satisfied employees are more involved and productive, leading to operational efficiencies and better financial performance.

Likewise, investments that result in intangible benefits build customer satisfaction and loyalty, which have a positive impact on sales and revenue as noted by Dancaková et al. [22]. According to Binh et al. [8] and Sirohi [82], intangible assets are positively associated with firm value and market performance everywhere in each industry. Nice brands and customer relationships have been shown to deliver more profit over time with a higher market value.

Even stronger is the connection between investment in intangible assets and tangible outcomes when innovation-related intangibles are included. According to a study from the University of Colorado Denver, investment in IT and associated intangibles has a direct impact on boosting productivity growth when IT investments are closely matched with innovation endeavors [50]. Firms performing radical innovation with relatively low IT investment will allocate less IT to achieve competitive advantage at the expense of other areas, and this study also confirms that firms investing in IT infrastructure will witness measurable improvements in innovation output ultimately improving competitiveness as well as financial performance.

To better capture such factors, firms need to improve their financial models by adopting a qualitative approach, implementing scenario-based models and considering long-term forecasts. Organisations can then make more informed choices based on providing the tangible link between the intangible and ratios such as employee satisfaction, productivity and cost savings. Such a holistic approach not only strengthens financial reporting but also connects forward-looking investments with long-term corporate interests.

F. Flexibility and Adaptability

Valuing assets that provide non-tangible values such as services cape requires flexible approaches since these assets are often dynamic over time in relation to market conditions. Decision-making frameworks need to be adaptable as assumptions and/or business conditions change over time. Studies highlight that flexible approaches enable companies to determine the impact of changing circumstances on their intangible investment and provide for better decision-making as well as improved sustainability.

Intangibles involve dynamic relationships and so cannot be accurately assessed by a simple, generic method. Čirjevsk is [16] states that flexibility is crucial for methods assessing assets providing intangible values because easily adaptable models can change along the market trends, consumer preferences, and operational aspects. To cite one instance, firms with flexible assessment approaches can change their assumptions regarding valuation as new information comes in and align their investment plans to the new development while alleviating risks.

In organisations with rapid technological changes, firms gain from methods such as scenario-based planning. Such an approach allows organisations to model a variety of futures and build flexibility into their strategies

[16]. Flexibility enables companies to shift direction when the markets change, optimise functional efficiency, facilitate a seamless transition amid developments, and promote sustainable growth by recalibrating business plans as needed.

While flexible approaches have benefits, they also create complexities and require ongoing monitoring. It is necessary for firms to adapt slowly under the principles of empty industrial standards, meaning that adaptation efforts will be in line with new standards built by organisations providing these services [16]. The recalibration of assumptions requires money, but without it organisations will misvalue their intangible assets and make poor decisions.

Verwaal et al. [90] stated that layered adaptivity is a key characteristic in methods that evaluate investments in intangibles. Such methods employ a number of interrelated indicators that can capture the complexity presented by intangible assets assuring that when changes occur in one area, they will not be detrimental to total valuation. A major unexpected market event could impact a brand's equities, necessitating adjustments to ensure accurate reflection of changing consumer behaviour.

G. Integration of Non-Monetary Benefits

These days, many modern organisations understand that value is more than simply a financial matter, an unavoidable aspect of the current business landscape where social and environmental impacts are equally significant. When decision-making frameworks incorporate non-monetary benefits, improvements in staff welfare and environmental sustainability, for example, a more holistic picture of performance can be produced. While these freely available outcomes may not yield the next quarterly earnings statement, they surely tally up to more sustainable organisational prosperity and agility in the long run.

With higher stakeholder awareness and the challenges faced by the environment worldwide, environmental sustainability initiatives are being integrated into central business strategies. Research by Coelho et al. [18] acknowledges the increased focus on Green Human Resource Management (GHRM) as a method of transferring desired employee behaviours in pursuit of environmental outcomes. Organisations that are focusing on sustainable practices through human resource strategies can benefit organisations by viewing corporate environmental policies as both a process for increasing brand image and generating productivity gains, as well as enhancing the organisation's overall social responsibility [18].

Additionally, organisations that care about employee health show higher job satisfaction which leads to increased retention and productivity. As noted by Caron et al. [10], non-financial benefits of significant infrastructure projects remain an aspect consistent with the alignment of employee goals towards sustainability and collaborative outcomes. Though harder to quantify, these types of intangible benefits are some of the most important for both operational improvement and long-term competitive advantage.

More and more organisations are moving towards integrated reporting using holistic frameworks like ESG that capture the non-monetary contributions made by organisations. These frameworks ensure that social, environmental, and economic outcomes are taken into account together to inform stakeholders in the best way possible on the firm's performance [10]. This means that the impact of activities, such as reputation gains and long-term savings associated with reduction of carbon footprint are not necessarily reflected in the financial statement immediately but companies investing in such initiatives can still be benefit from such efforts.

Although integrating non-monetary benefits is important, it can be a challenge. If something is hard to measure, its value might be lost. As Coelho et al. [18] emphasised, GHRM practices have their limitations as they have benefitted from poorly formulated measures for assessing efficacy apart from financial metrics. Similarly, Caron et al. [10] also discussed the need to clearly distinguish between project-specific and general societal objectives, in order not to lose non-commercial contributions.

Incorporating non-monetary benefits into valuation methods helps organisations value their operations more sustainably, aligning with what society and the planet ultimately needs. While not immediately profitable, these benefits can increase employee engagement and public trust as well as profitability over the long-term. Firms

must ever-evolve their metrics and complement them with qualitative assessments to portray the whole of the impact they have.

H. Stakeholder Involvement

Intangible values, such as employee engagement, customer satisfaction and environmental initiatives are influenced by both internal (employees) and external (communities, customers and shareholders) stakeholders. Including stakeholders in the valuation process helps to capture these views, leading to a more rounded and inclusive assessment of an intangible investment. Research indicates that firms that favour stakeholder participation improve CSR results, which in turn leads to increased social good and profit [74].

Increased stakeholder engagement helps build accountability, making sure investment strategies are in tune with public expectations. Sustainability-orientated companies, for example, engage customers and communities to enhance environmental performance in some way through green innovation [74]. As socially conscious investing flourishes, this natural partnership increases brand equity and brings positive long-term profits as well.

According to McKinsey & Company [61], stakeholder management is an important practice that will build long-term value for businesses by balancing wealth creation with non-financial goals. CSR strategies incorporating stakeholder feedback, including suppliers and employees drive governance and operational efficiencies that strengthens sustainable business models.

Collaborative decision-making is to strike a balance of interests between shareholders, employees and external stakeholders. This ensures that investments generate financial returns while also creating positive environmental and social impact. Studies show that companies with effective stakeholder engagement are more well-organised to detect risks beforehand and effectively adapt to change, resulting in not only operational success, but also good public opinion [96].

While engaging stakeholders adds value to the valuation process, it evokes conflicting interests and needs a more structured approach. It can be complicated, such as reconciling shareholder profit desires with environmental targets. To ensure appropriate contribution from each stakeholder type, organisations need strong frameworks aligning stakeholder contributions with strategic priorities while ensuring trust and transparency [76].

The involvement of stakeholders is crucial to gain the full potential value from intangible assets and to align investments in these with financial and non-financial objectives. Through active engagement, organisations enhance decision-making accuracy, ensuring their strategies are inclusive, sustainable, and resilient.

RESEARCH METHODOLOGY

This study aims to develop an anticipated investment return calculation theoretical model for services cape upgrades based on the quantification of intangible values, which involves a research process consisting of 4 phases. The theoretical model to be developed consists of 3 main components, which are the Intangible Value Quantification component, the Cost Data component, and the Investment Return Calculation component. The Intangible Value Quantification component is constructed in the first phase of the research, followed by the Cost Data component in the second phase, and finally the Investment Return Calculation component in the third phase of the research. The developed theoretical model will then be validated for goodness-of-fit in the fourth phase of the research. The first phase is divided into 2 parts: to determine the characteristics of effective investment evaluation method(s) to quantify services cape intangible values, and to determine the investment evaluation method(s) that is most appropriate for the quantification of services cape intangible values.

The first part of phase 1 which is to determine the characteristics of effective investment evaluation method(s) for services cape intangible value quantification is vital for the development of the theoretical model as the findings of this part will help to researchers to determine investment evaluation method(s) that is most appropriate for the quantification of services cape intangible values. Without the characteristics thoroughly identified, it is impossible to carry out part 2 of phase 1 which is to determine and select the method(s) that can be used to effectively quantify services cape intangible values. Identifying the method(s) to quantify services

cape intangible values is heavily dependent on the characteristics that the method(s) needs to possess. The first component of the theoretical model relies on the success of phase 1 (part 1 and part 2) of the research. This paper presents the findings of the first part of phase 1. Thus, the research methodology presented here is for the first part of phase 1.

The authors employed both the qualitative and quantitative methods to gain deep insights into the complexities of identifying characteristics that are necessary for investment evaluation methods to quantify services cape intangible values effectively. The qualitative part of this research offers the authors the opportunity to gain insights into the characteristics that are often challenging and unfamiliar to practitioners, due to their complexity and limited application in traditional investment return calculations. Patton [75] explains, qualitative inquiry is valuable to help researchers examine complex issues, as it offers context and depth of understanding that are crucial for topics with multiple layers and subjective nuances.

The qualitative component, on the other hand, helps the authors to systematically asses and value the characteristics that had been explored qualitatively. This integration (qualitative and quantitative) provides an advantage to the authors. The qualitative approach highlights the themes and context, which is very important for understanding how and why each characteristic is important. However, the qualitative approach rarely provides information on how important each characteristic is. This is where the quantitative approach helps to most as it allows authors to further appraise the significance of each characteristic based on quantifiable metrics such as Relative Importance Index (RII) [46]. The combination offers a balanced perspective, allowing for the comparison of perceptions and validation of findings between various stakeholders [20 66]. Saying that someone is very tall is insightful but saying someone is 2 metres tall allows the listener to actually understand how tall the subjected person really is.

The previous researches have also emphasised the value of employing qualitative and quantitative methods together to develop a more complete understanding of complex problems. For instance, Creswell and Plano Clark [20] used employed qualitative interviews to determine the impact of public health interventions based on patient experience. This was then followed by quantitative surveys to measure the prevalence of the collected experiences. The combination of both qualitative and quantitative approaches gave the researchers a complete picture where personal accounts were combined with generalisable data [20].

Similarly, Ivankova et al. [43] utilised the mixed-method approach when researching student attrition in an online doctoral programme. They began with in-depth qualitative interviews used to identify individual factors that could influence persistence and then verified these results using a quantitative survey of a larger sample. This allowed the researchers to measure how significant these factors are on a broader scale. This study showed the feasibility of quantifying qualitative insights that yielded both statistically significant and contextually meaningful patterns.

Collectively, these studies demonstrate the value of mixed methods in understanding and providing a more nuanced view of complex, multidimensional phenomena. The qualitative approach used for this study deepens the understanding based on what practitioners think about intangible value characteristics, while the quantitative method generates measurable information that confirms those perspectives and enables to analyse which investment return methods are well suitable for services cape intangible values.

Determining the characteristics required for investment evaluation methods to quantify services cape intangible values involved 4 steps:

A) Step 1: Literature Review

The first step involved conducting an extensive literature review to gather existing knowledge on services cape, intangible values, and the characteristics required for investment evaluation methods to quantification of intangible values. The literature was collected from a variety of sources, including journals, academic conference proceedings, websites, blog posts, Google Scholar, and books. The sample comprises English-language, peer-reviewed journals, conference papers, and books on methods for anticipating investment return calculation based on the quantification of intangible values.

To compile the literature sample, a structured search was conducted using pairs of keywords such as 'services cape', 'impact of services cape', 'measurement of intangible investment returns', "investment evaluation method characteristics', and 'calculation of intangible investment returns'. Additionally, broader keywords were used in the searchers, including 'intangible values', 'investment return', 'non-financial metrics', 'economic valuation', and 'methods to quantify intangible values'. These keywords were searched in the titles, keywords, or abstracts of the articles. The search was carried out in major databases subscribed to by the Universiti Teknologi Malaysia Library (UTM online database, e-journals, and e-books).

Eight characteristics (required for investment evaluation methods to quantify intangible values) were identified from the literatures. The identified characteristics would then brought to a panel of experts in interview sessions (to be discussed in Step 2: Selection of Experts for Interview) to gain new insights and allow the experts to confirm, refine, or challenge the identified characteristics (to be discussed in Step 3: Interview).

B) Step 2: Selection of Experts for Interview

Initially, 30 experts were identified and approached for the interview. The experts were those with expertise in economic valuation, non-market valuation, and methodologies for quantifying intangible values. These respondents were chosen for their specialised knowledge and extensive experience in intangible value quantification in various settings.

To ensure the appropriate selection of respondents, the authors adopted the three requirements emphasised by Dahooie et al. [21], Aberbach and Rockman [1], Neo [72], and Skulmoski et al. [83], which are relevance of expertise, credentials and experience, and availability and willingness.

Eventually, 12 experts out of 30 responded positively to the invitation to participate in the interview. Guest, Bunce, and Johnson [32] support the use of 8 to 12 participants in qualitative research, which aligns with the number of respondents in this study. Similarly, Hennink and Kaiser [39] suggest that sample sizes for achieving saturation can vary between 9 to 17 interviews depending on the complexity of the study and the research context.

When it comes to qualitative research, the literatures indicates that there is no single answer as to what sample size is sufficient and there is no single answer to the question of what sample size is sufficient to reach theoretical saturation (theoretical saturation = criterion for judging when to stop sampling the different groups pertinent to a category. Saturation means that no additional data are being found whereby the researcher can develop properties of the category). Factors such as heterogeneity of the studied population, the scope of the study, and the adopted methods and their application (e.g., the length of the interviews) rather than the number of respondents are believed, however, to have a central role in achieving sufficiency [7, 32, 59].

Guest, Bunce, and Johnson [32] used data from their own study to conclude that 88% of the codes they developed when analysing the data from 60 qualitative interviews were created by the time 12 interviews had been conducted, which explains the common view of 12 being the sufficient number of respondents in qualitative research. Thus, for this research, 12 is definitely sufficient.

C) Step 3: Interview

A series of semi-structured interviews were conducted over a 4-month period. These interviews provided deeper insights into the characteristics required for investment evaluation methods to quantify services cape intangible values. The characteristics were identified and studied from various literatures, yet they were not specifically discussed in the context of services cape intangible value quantification. The interview sessions with the experts helped to deeply understand the necessity of the identified characteristics within the context of services cape intangible value quantification.

The semi-structured format was chosen because it strikes a balance between structured questioning and open-ended exploration, allowing the researcher to address key topics while giving participants the freedom to elaborate on their expertise and introduce new insights [45]. According to Jalil and Shaari [44], and Jamshed [45], semi-structured interviews are effective because participants in in-depth interviews often possess

specialised knowledge, which enhances the quality of the data collected. While structured interviews ensure consistency, they can be too rigid to capture the depth of responses required for a study of this nature. As noted by Ugwu and Eze Val [87], structured interviews typically involve closed-ended questions, limiting respondents to simple yes-or-no answers and following a fixed sequence of questions. On the other hand, unstructured interviews, though offering flexibility, may produce inconsistent data that is difficult to systematically analyse, as they lack a pre-planned set of questions and rely heavily on spontaneous inquiry [45]. The semi-structured approach provided an ideal balance, maintaining focus on the research objectives while enabling a comprehensive exploration of methods for quantifying intangible values.

The authors constructed the interview questions based on the findings (the characteristics) from various sources in the literature. The first set of questions were designed to capture how participants viewed these characteristics in terms of their importance and relevance in the real world. An important aspect of the semi-structured interview was to avoid closed questions in order to foster a comprehensive discussion on certain key aspects, enabling participants to give their views based on their expertise. This was then followed by targeted questions addressing specific services cape upgrades, such as the characteristics for effective investment evaluation based on the quantification of services cape intangible values and common challenges pertaining to the quantification.

A question guide was also developed to ensure standardisation of the interview process across all sessions. The question guide consists of an ordered series of core questions that were aligned to the research objectives ensuring every subject matter critical to the research was asked with each participant. The guide also included follow-up probes related to each core question to help balance consistency and flexibility. The use of these probes enabled the interviewer to probe for detail in responses, but not be so far away from the core question set that inconsistency became a risk. If, for instance, one of the core questions was about the perceived importance of a specific characteristic, such as the use of proxy metrics in quantifying intangible values, follow-up probes would include prompts like, "Can you provide an example of how you've used proxy metrics in your assessments?" or "What challenges did you encounter when using proxy metrics to quantify intangible values?" or "Why do you think proxy metrics are often used by various organisations?" This allowed the authors to maintain uniformity for each interview session (guided by the same core framework), while still allowing for deeper exploration of unique insights shared by participants at the same time.

The participants were also requested to rate the importance of each of the characteristics on a likert scale (1 to 5). This allowed the authors to analyse the significance of the characteristics as perceived by the participants, however this time the assigned rating provided a measurable value for the authors to work with. This approach helped to improve the reliability of the qualitative data as the structured and quantifiable aspect of the Likert scale reduces potential bias that may arise from purely narrative data. This way, the trustworthiness of the results is reinforced as the qualitative insights are supported by measurable data. Several studies including by Joshi et al. [46], Nemoto & Beglar [71], Carifio & Perla [9] support this methodology.

The interviews were carried out either in-person or online, depending on the availability, location, and preferences of the participants. Each interview lasted for approximately 90 to 120 minutes, which allowed sufficient time for an in-depth exploration of the topics related to the quantification of servicescape intangible values. This flexible approach enabled participants to provide detailed insights despite their busy schedules. Each of the interviews was recorded both in audio and video formats.

Each interview session was immediately followed by content analysis, frequency and Relative Importance Index calculation of the characteristics obtained from the interview data. This is to determine if there are any changes in the results of analyses as the interview moved from one expert to the next. By using the rating given by each of the experts, the frequency and RII for each of the characteristics were calculated progressively. The result of frequency calculation is needed as inputs to the RII calculation.

$$RII = \frac{\sum (f \times w)}{A \times N}$$

f = frequency of each rating

w= rating

A= maximum possible rating

N= total number of interviews (up to that point)

Fig 1. Relative Importance Index formula

Frequency and RII calculations were carried out for the ratings given to each of the characteristics after the interview with the first expert, and the results were recorded. The ratings received from the first expert were then combined with the ratings given to each of the characteristics by the second expert (immediately after the second interview) and frequency and RII calculation was carried out. The second RII result was then obtained. The percentage-change from the first RII and the second RII was then calculated. A percentage-change of bigger than 5% in any of the RII of the characters means saturation has yet to be achieved. The use of 5% as a minimal change threshold (stopping criterion) in new data is in alignment with structured approaches to quantification of saturation. Various researchers have recommended the use of 5% as the threshold that indicates saturation has been achieved [39, 65, 69, 33]. The process was repeated for the remaining interview sessions.

Figure 2 demonstrates the process that has been discussed in the previous paragraph. As the interviews progressed, the RII percentage-change evolved with each respondent. For example, the RII percentage-change of each characteristic kept on changing by more than 5% as the interview sessions progress from respondents 1 to 7. However, by the time interviews session reached respondents 8, 9, and 10, the RII percentage-change began to stabilise, changing by less than 5%. At this point, it became evident that the responses were converging, and data saturation was being approached. To ensure thoroughness, interviews were conducted with three additional respondents, as the interview appointments had already scheduled, bringing the total number to 12. The RII percentage-change remained below 5%, confirming that data saturation had been reached, the point at which no changes would occur with additional responses [70].
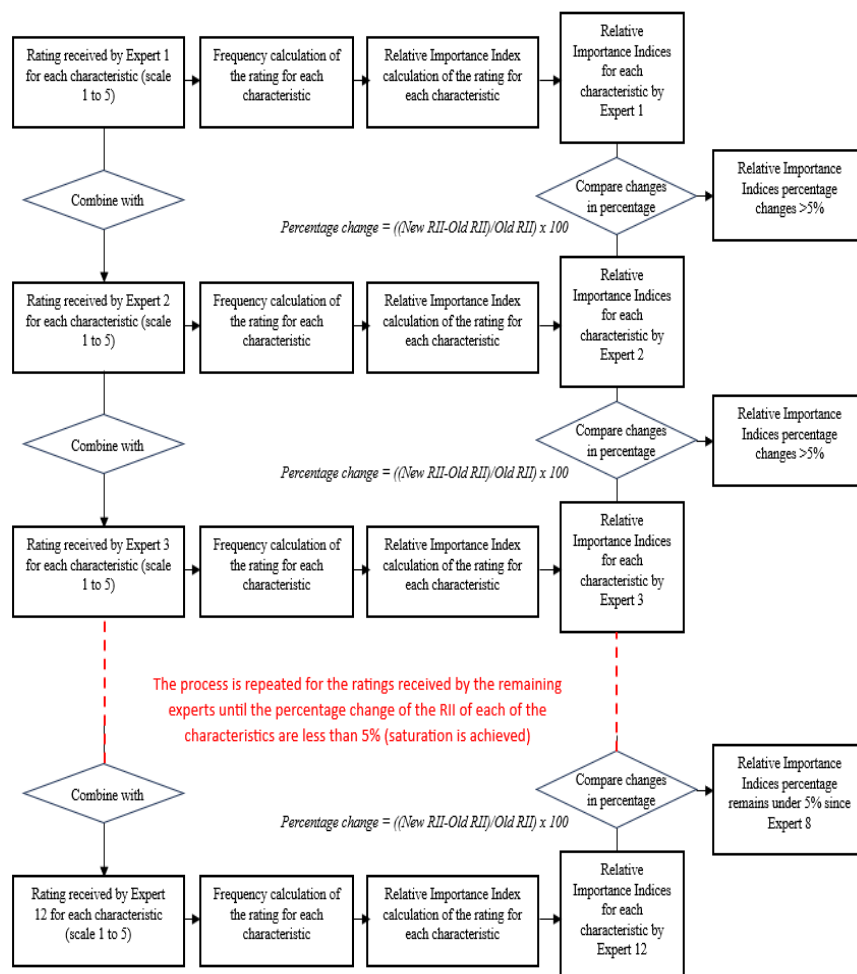

Fig 2. The process of determining saturation through stable Relative Importance Index (RII) percentage-change

The result of the process of determining saturation through Relative Importance Index (RII) percentage-change is as shown in Figure 3. It can be seen in Figure 3 that saturation was achieved from the eighth interview, as discussed previously. The percentage change of the RII starting from the eighth to the twelfth interview remained below 5%. As discussed in Step 2, the researcher did not proceed with anymore interviews after the twelfth. Guest, Bunce, and Johnson [32] demonstrated that 88% of the codes they developed when analysing the data from 60 qualitative interviews were created by the time 12 interviews had been conducted, which means for this research 12 interviews would be considered sufficient.
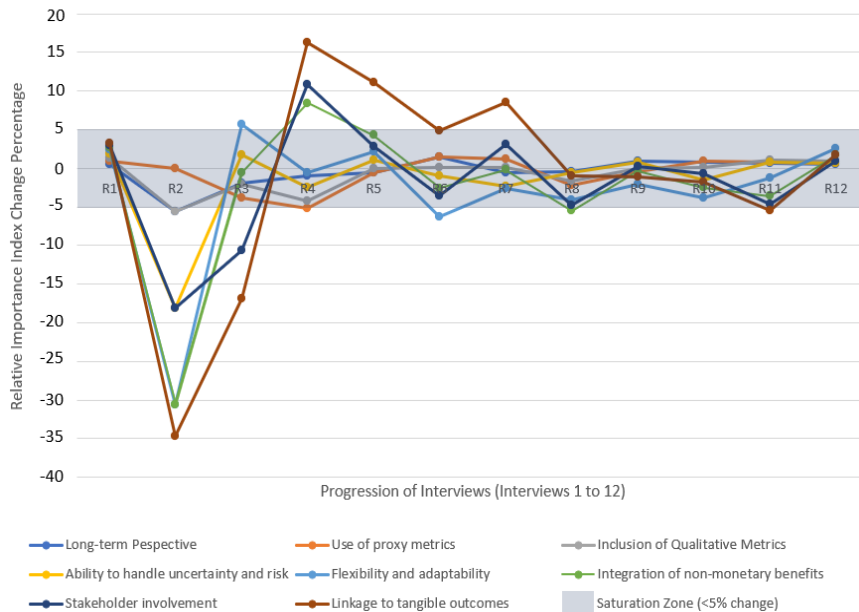

Fig 3. Relative Importance Index (RII) percentage-change for each characteristic

D) Step 4: Data Analysis

Content analysis was carried out on the interview data which consists of the recorded audio and video data, and frequency and Relative Importance Index (RII) were used to calculate the rating assigned by the experts for each of the characteristics. This section will discuss the content analysis that has been carried out, followed by the frequency and RII calculation.

Content analysis was selected as the primary method for systematically organising and analysing the interview data. Content analysis was preferred over other methods, such as thematic analysis, meta-analysis, or systematic review, because it offers a balanced approach incorporating both qualitative and quantitative elements. While thematic analysis primarily focuses on identifying patterns within qualitative data, it lacks the quantitative rigor needed to measure the frequency of those patterns across large datasets [88]. Meta-synthesis, on the other hand, is typically used for integrating findings from multiple qualitative studies to develop new theories, which was not the goal of this study [24]. Content analysis, however, offered the dual benefit of exploring the nuances in intangible value quantification while allowing for the categorisation and measurement of their occurrences across various investment return calculation methods. This made it particularly suitable for addressing the research objectives, as it acknowledged both the complexity of intangible value quantification and the need for systematic analysis.

The interview recordings (both audio and video) had to be processed so that the extracted data could be used for analysis. The transcription of the interviews was carried out with meticulous attention to detail, converting the video and audio content into a text format suitable for detailed analysis. This transcription process was executed using Notta software, renowned for its proficiency in transcribing voice from audio and video into text. Subsequently, the transcribed data was imported into NVivo for content analysis.

NVivo was selected over other tools like Atlas.ti and MAXQDA. While these software options offer similar capabilities, NVivo was chosen for its robust functionality in handling large dataset and its ability to integrate multiple data types. NVivo functioned as a versatile data analysis tool capable of importing and organising texts,

audio files, videos, news articles, spreadsheets, online surveys, web content, and social media data from various sources into a user-friendly interface. In this study, NVivo was employed to organise and analyse textual data from the interviews using a quantitative approach. The software facilitated the classification, sorting, and arrangement of information related to the characteristics needed for investment evaluation methods to quantify intangible values effectively.

Once the transcribed data had been imported to NVivo, it was organised and categorised through the creation of nodes and the application of coding stripes. Nodes represented key concepts, themes, or categories identified within the data, while coding stripes visually tracked the coding process, facilitating patterns analysis across the dataset. Coding is the first step to analysing qualitative data and it helps the researchers in organising and analysing the interview data systematically. Coding assigns parts of the text to nodes or categories, which corresponds with themes or qualities. If the expert states that "use of proxy metrics" is a characteristic that is important for the assessing intangible values, the statement would then be coded to a node labelled as ''use of proxy metrics''. With this process, NVivo is able to arrange the data by placing all relevant statements under the relevant nodes, so that the responses associated with every characteristic could be reviewed and interpreted easily. By way of coding, NVivo allows the researchers to not only record and count instances of each characteristic but also to capture the context in which experts discuss them, thus providing a comprehensive view of the relevance of the characteristics.

Beyond basic coding, the researchers also used NVivo to analyse the frequency and number of coding references for each node, adding a quantitative dimension to the qualitative analysis. Coding frequency counts reveal how often each characteristic is referenced across the interviews, while coverage percentages show the extent of text assigned to each node relative to the entire dataset. Additionally, NVivo provides metrics for the number of coding references, which counts the total occurrences of each theme or characteristic within individual data sources, and the aggregate number of coding references, which sums all instances of coding for a node across multiple sources. For example, if "use of proxy metrics" has both a high frequency count and extensive text coverage, this suggests that experts discuss it frequently and in depth, implying that it holds substantial importance. These metrics provide quantitative indications of a characteristic's prominence, aiding NVivo in identifying which characteristics are emphasised by experts. This combined analysis offers a more nuanced and objective measure of significance, based on both the frequency of mentions and the depth of discussion.

The authors then had the options of presenting the findings in various visual forms that included word clouds, word trees, hierarchy charts, sunburst charts, project maps, matrix coding queries, and diagram comparisons. Hierarchy charts, such as tree maps and sunbursts chart, were used to illustrate the hierarchy of codes, with the size of the areas reflecting the quantity of coding references. A larger area indicated a greater number of references. Word clouds also depicted the code hierarchy, with the size of words varying to show the volume of coding references. In this study, word clouds and hierarchy charts were chosen to visually represent the code hierarchy.

Though qualitative coding and content analysis in NVivo provides important insights, this approach also has limitations. Even after coding the frequency and thematic relevance, subjectivity of the judgments could still cause concerns, particularly when it comes to complex or nuanced responses [95]. Moreover, as coding on its own can neither fully capture the nuanced expert opinion nor their relative importance across all interviews [95], it can lead to an oversimplified view of significance. Integrating quantitative analysis alongside NVivo's qualitative data enhances the reliability of the findings by adding a statistical dimension to the generated results. Even just by using simple descriptive statistics for example, can provide a more objective measure of significance for each of the characteristics.

Moving to the quantitative part of the analysis, frequency and Relative Importance Index (RII) calculations were carried out on the ratings that were given by the experts to each of the characteristics. The ratings were given in a likert scale ranging from 1 to 5. The frequency calculation result was incorporated into the RII calculation. The RII calculation served 2 purposes. The first purpose was to determine saturation by establishing the RII percentage-change between interviews, as already discussed in Step 3. The second purpose was to calculate the RII indices for each of the characteristics to allow the researchers to compare the significance of different characteristics across interviews, which could not have been acquired solely from the text-oriented result of

qualitative analysis. This comparability enables a more nuanced understanding of which characteristics are universally valued and which are more subjective or variable.

FINDINGS

The result of the content analysis indicates that the experts are of the opinion that seven of the identified characteristics are indeed needed for investment evaluation methods to quantify services cape intangible values with some characteristics are perceived as more critical than others. Figures 4 and 5 show the coding references and coding frequency percentage generated from the content analysis result.

Codes	Number of coding references	Aggregate number of coding references ⌄
Codes\\Finding 2\\Inclusion of Qualitative Metrics	12	12
Codes\\Finding 2\\Long-Term Perspective	11	11
Codes\\Finding 2\\Ability to Handle Uncertainty and Risk	10	10
Codes\\Finding 2\\Integration of Non-Monetary Benefits	9	9
Codes\\Finding 2\\Use of Proxy Metrics	9	9
Codes\\Finding 2\\Flexibility and Adaptability	8	8
Codes\\Finding 2\\Stakeholder Involvement	8	8
Codes\\Finding 2\\Linkage to Tangible Outcomes	7	7

Fig. 4. Coding references

Codes (Theme)	Number of Coding References	% of Total Coding References
Ability to Handle Uncertainty and Risk	10	13.51%
Flexibility and Adaptability	8	10.81%
Inclusion of Qualitative Metrics	12	16.22%
Integration of Non-Monetary Benefits	9	12.16%
Linkage to Tangible Outcomes	7	9.46%
Long-Term Perspective	11	14.86%
Stakeholder Involvement	8	10.81%
Use of Proxy Metrics	9	12.16%
Total	74	100%

Fig. 5. Coding frequency percentage

The results shown in Figure 4 and 5 indicate that 'Inclusion of Qualitative Metrics' and 'Long-term Perspective' are perceived as the two most significant characteristics by the experts while 'Stakeholder involvement' and 'linkage to tangible outcomes' are considered the two least significant characteristics of the lot.

From figures 4 and 5, NVivo generated a word cloud (refer to Figure 6) that highlights the key characteristics of effective investment evaluation methods for services cape intangible value quantification. The larger the term in the word cloud, the more frequently it appeared in the dataset. Prominent terms such as "qualitative," "metrics," and "long-term," and "uncertainty" underscore their importance as characteristics of investment evaluation methods for services cape intangible value quantification.
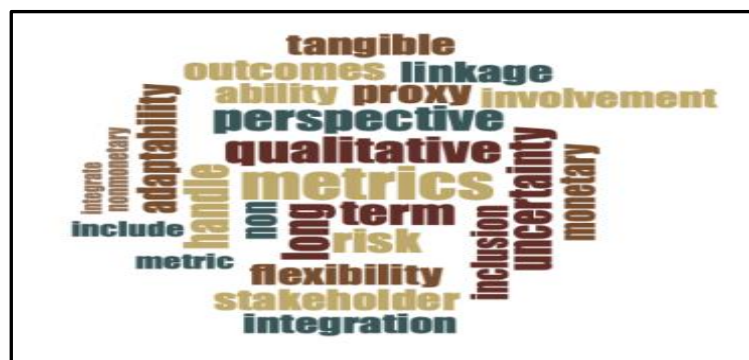

Fig. 6. Word Cloud Visualisation Generated by NVivo

A much clearer and defined result of the characteristics is presented in Figure 7 in the form of a hierarchy chart. The hierarchy chart illustrates a tree map showing the relative prominence of characteristics based on the coded data. Each block represents a different characteristic, with its size indicating its relative frequency or significance in the dataset.
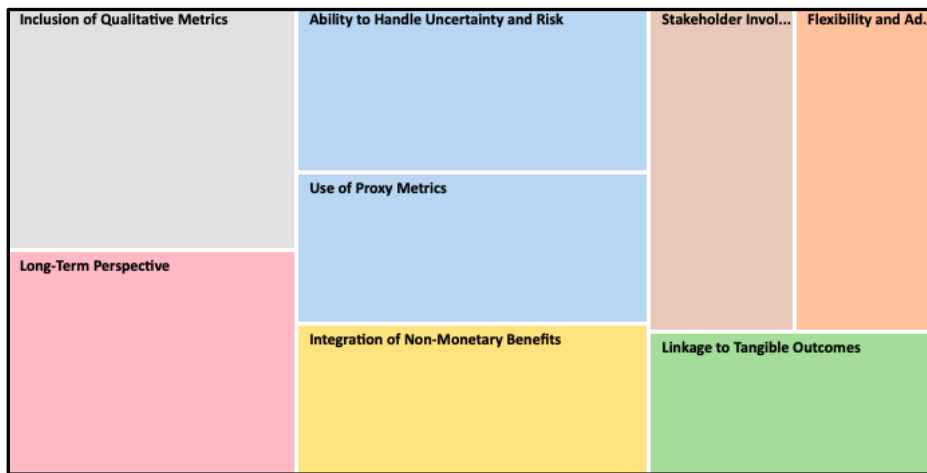

Fig. 7. Hierarchy Chart Generated by NVivo

'Inclusion of Qualitative Metrics' and 'Long-term Perspective' are represented by the largest blocks in the treemap, indicating its dominant presence in the dataset. This suggests that to quantify services cape intangible values, investment evaluation methods should be able to incorporate qualitative metrics and assess the intangible value of services cape upgrades from a long-term perspective. Empirical qualitative assessments need to be integrated in investment evaluations as services cape intangible values are complex in nature [10, 19]. Multi-year forecasting techniques, on the other hand, enable organisations to capture gains that accrue over time, providing a clearer understanding of the true return on investment [22]. This result also suggests that the experts interviewed agree with the findings from the literature on this matter.

'Ability to handle uncertainty and risk', 'Use of proxy metrics' and 'integration of non-monetary benefits' are depicted by a moderately size block. The moderate block size suggests that the three characteristics are significant but still requires the first two most dominant characteristics for an investment evaluation method to effectively quantify services cape intangible values. The ability to handle uncertainty and risk is a required trait, and the use of proxy metrics and integration of non-monetary benefits are critical to long-term value creation, as traditional financial measures alone are unable to capture these values [93].

'Stakeholder involvement', and 'flexibility and adaptability' represented by slightly smaller blocks than the three preceding characteristics are perceived as slightly less significant. However, the minimal difference between the block size of this group and the previous one suggests that they are still have notable impact on the quantification of services cape intangible values. McKinsey & Company [61] noted that stakeholder involvement is important for long-term business value, particularly when it comes to balancing wealth creation with non-financial goals. Machiels [58], on the other hand, stated that flexibility is crucial for assessing assets providing intangible values because easily adaptable models can change along the market trends, consumer preferences, and operational aspects.

'Linkage to tangible outcomes' is perceived as the least significant characteristic. Despite being mentioned in the literatures as one of the important characteristics of effective investment evaluation method for quantifying intangible values [22, 8, 82], the experts interviewed have some reservations regarding the said characteristic. Leveraging the responses from the follow-up probes (explained in Step 3), it can be summarised that the experts interviewed are of the opinion that since intangible values are arduous to quantify objectively due to lacking concrete ties to measurable outcomes, "linkage to tangible outcome" may not adequately characterise an investment evaluation method aiming to capture such aspects. Satisfaction, comfort or ambiance hold relevance precisely because they don't immediately translate to results but cultivate prolonged benefits over instant outputs. Their association to material consequences can be ambiguous or imperceptible.

Moreover, the experts contend that intangible values commonly exert intricate, delayed impacts shaping organisational performance with time rather than through immediate tangible outcomes. For example, a positive workplace environment could indirectly reduce employee turnover through various determinants at interplay. Yet assigning definitive conclusions to such intangibles proves challenging due to additional influencing variables. The experts further noted that approaches for quantifying the indefinable like Contingent Valuation or Social Return on Investment prioritise estimated or proxy indices over straight correlations to concrete yields, permitting intrinsic worth to be represented minus coercing a connection to a real deliverable which risks distorting its genuine significance.

On the quantitative part, findings from the Relative Importance Index (RII) calculation on the ratings given by the experts to the characteristics indicate a similar picture to the result obtained from the content analysis, as can be seen in Figure 8.
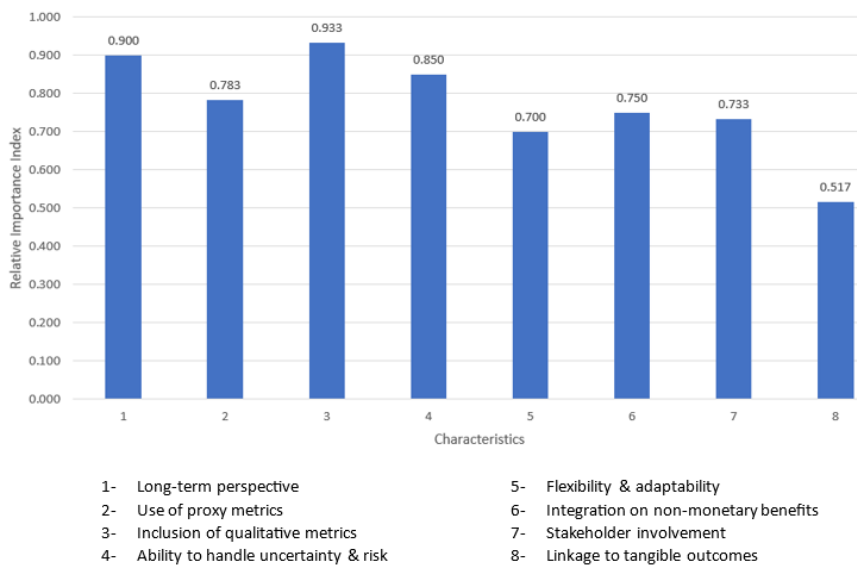

1- Long-term perspective
2- Use of proxy metrics
3- Inclusion of qualitative metrics
4- Ability to handle uncertainty & risk
5- Flexibility & adaptability
6- Integration on non-monetary benefits
7- Stakeholder involvement
8- Linkage to tangible outcomes

Fig. 8. Relative Importance Index (RII) of each characteristic

It can be seen in Figure 8 that 'Inclusion of qualitative metrics', 'long-term perspective', and 'ability to handle uncertainty and risk' acquire the highest relative importance index compared to the other characteristics. A common practice is to interpret RII values above 0.75 as indicating significant factors. This threshold is supported by several studies including Adnan et al. [2], Enshassi, Mohamed & Abushaban [26], and Kometa, Olomolaiye & Harris [52]. Based on the 0.75 threshold, the RII indicates that all 7 out of 8 characteristics can be considered as significant. The one that does not qualify is 'linkage to tangible outcomes' as it scored only 0.517. The RII finding further complements and refines the findings from the content analysis by pinpointing which characteristic is not significant for the quantification of services cape intangible values.

The overall findings indicate that with varying levels of significance, seven characteristics are indeed required for investment evaluation methods to quantify services cape intangible values effectively. Arranged according to hierarchy, Table 1 summarises the findings from the content analysis and RII calculation.

Table 1. Hierarchy of Characteristics of Effective Investment Evaluation Methods for Servicescape Intangible Value Quantification

1	Inclusion of Qualitative Metrics
2	Long-term Perspective
3	Ability to Handle Uncertainty and Risk
4	Use of Proxy Metrics
5	Integration of Non-Monetary Benefits
6	Stakeholder Involvement
7	Flexibility and Adaptability

IMPLICATION OF THE FINDINGS

The findings indicate that there is more to quantifying services cape intangible values than merely employing a straightforward investment evaluation method that attempts to quantify the values in monetary terms. As discussed in the early part of this paper, anticipating the investment return of services cape upgrades based on the quantification of intangible values will inevitably involve the amalgamation of various methods and layers of processes. The various identified characteristics that need to be fulfilled (by the evaluation method alone) demonstrate the complexity of the process. Whatever method(s) that will be selected as part of the model (anticipated investment return calculation theoretical model based on the quantification of services cape intangible values) to be developed in this research, the method(s) will need to possess the seven characters identified as significant in this phase of the research.

CONCLUSION

This paper presented a part of the findings from phase 1 of a research that aims to develop an anticipated investment return calculation theoretical model based on the quantification of services cape intangible values. The characteristics identified in this paper underscore the need for a comprehensive investment evaluation method for the quantification of services cape intangible values. The findings presented in this paper is currently being used (together with other relevant components) in the development of the theoretical model. The identified characteristics are essential for developing the theoretical model as they guide the researchers in selecting the most suitable investment evaluation methods for intangible value quantification. Completing this first part is crucial for the next step, which involves choosing specific methods for quantification, as the selection process relies on the identified characteristics. Thus, the foundation of the theoretical model depends on the successful completion of both parts of phase one.

ACKNOWLEDGMENT

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