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With a focus on Ethical and Sustainable Business

Editorial

- 3 Editorial: Climate Change
Lesley Pocock
DOI: 10.5742/MEJB.2019.93605

Business Theory

- 4 Project Management: Science or a Craft?
Abdulrazak Abyad
DOI: 10.5742/MEJB.2019.93608

Business and the Environment

- 18 Status, distribution and dynamics of Chilgoza Pine (*Pinus gerardiana* Wall.) Forest in Suleiman Mountain Range, Pakistan
Rabail Urooj
DOI: 10.5742/MEJB.2019.93606

Business Review

- 20 Tenant's Satisfaction in Abu Dhabi (UAE): A survey
Malik Khalfan, Irfan Ul Haq
DOI: 10.5742/MEJB.2019.93607

Society

- 23 As long as I live
Ebtisam Elghblawi
DOI: 10.5742/MEJB.2019.93609

From the Editor - Climate change and destruction of the planet



“Our Future is not yours to sell” - Australian children march for action on Climate Change in December 2018

It is time that deliberately and wantonly destroying our planet and our ecosphere is called what it is – a crime against humanity.

The biggest political excuse for not taking action against Climate Change is lacking in both moral and economic judgement. Such Governments plead that it will interfere with ‘economic growth’. There is not much economic growth on a dead planet and with species starved to extinction. Their response is purely based on greed and personal advantage, at the expense of all people and all sense.

Indeed those decrying climate change measures, be they industry groups or political groups, are only those who have a vested interest in maintaining the status quo – destruction of the planet for base motivations of greed and power and to a lesser degree, loss of privilege for individuals exploiting the riches that bad climate management affords them.

In most cases the cry for a proper response comes from the 99% of the human population who have very little vested economic interest e.g. the ‘gilets jaune’ in France and now Taiwan, but while they should also be doing their share there is some justification for their complaint in that it is the 1% who own most of the planet who are those not doing their part or paying their share, or indeed paying anything at all. Rather it is the same 1% that has rampantly destroyed the planet for personal wealth.

I could not imagine being given the gift of life and being born into a universe with great troubles and injustices and not

wanting to make your universe and planetary life better, and not doing everything you could possibly do to have such evil and brutality never happen again. Otherwise this great gift of life is wasted on humankind.

Yet the predominantly brutal classes that currently rule much of the planet use their gift of life to commit endless crimes and to perpetuate their own vanities and have kept other humans in slavery, poverty, famine, powerlessness, homelessness and hopelessness. If we cannot stop them, let us at least label them so they know themselves, what they are.

All such detritus should be charged with crimes against humanity. It is not only a crime against those currently living here, it is also a crime against all humans who may yet suffer to be born. Those countries polluting the planet and the psychological and physical health of their own people, are also destroying the health of everyone. We are now in a war for our very survival as a species and for the continuation of other species we love and that we rely on for our own survival.

If we cannot have our world organisations and justice systems deal with them as they deserve (imprisonment and disempowerment) we should use our collective bargaining power and our right of choice, to attack the only thing these people and their institutions care about – personal wealth. Global consumers should boycott the products of those companies and countries not meeting their climate change and human rights commitments.

China and the US are the world's two biggest polluters - and they do it in the name of economics/money for a handful of powerful individuals. If they cannot be persuaded to do the right thing, then they, their goods and services produced via such filthy and lazy means, must be highly taxed, preferably, totally boycotted.

Horrifyingly, the fate of humanity and the world is too often in the hands of the most ignorant and evil miscreants in our midst. It is not surprising that most countries where injustice prevails are ruled by money focused dictatorships or would-be dictators and certainly represent the moneyed classes and not the ordinary people who they have nothing but contempt for. If they do not exercise proper judgement in their own countries and respect the rights of the populace they are certainly not going to be good global citizens either. They should be dealt with as the bullies they are. Sadly there are many political bullies and they try to form gangs, as such bullies do. It does not stop us from speaking the truth about them however. Equally, the ordinary people of these countries are not fooled by the threats and lies that their leaders use to perpetuate their reign and deny their culpability. They see the situation very clearly.

The old colonialists and the neo colonialists take advantage of poor countries and the corrupt small league dictators, giving them modern day 'beads and mirrors', such as empty buildings and roads that lead nowhere, to enslave them in debt. They take advantage of the gullible - as do all colonialists - while robbing them of their natural resources and economically enslaving them. They help to 'develop developing nations' so they can steal their resources or own their resources and sell them back to the local people who owned them in the first place. Is this too difficult to see?

At the same time they are doing this to everyone on the planet, and their dirty practices that are polluting our land, skies and our oceans are also at risk of polluting our hearts and minds.

How heinous an act is it to destroy an entire planet and all that live on it purely for ridiculous amounts of personal wealth and power in one lifetime/generation. It seems it is time for the ordinary, decent people of the planet to educate their masters. History will name them correctly - if there is to be any left on this planet. There is still the history of the universe however and their ugly story will be recorded for eternity in the dead bones of planet earth; their evil, bloated faces will stay in the memory of the living and the dead. And that is how it should be.

Planetary destruction as the source of global famines, injustice and inequity

The Hunger Games were not just a series of recent excellent science fiction movies. The Hunger Games have been around for millions of humans for millennia. Of course that is only apparent to those who are perpetually hungry. Slavery is not a thing of the past; currently slavery affects at least 45 million people (33 % of slaves are children; 49 %, nearly

half, are women) and if you count in those who are forced into a life of endless labour to survive and keep a roof over their heads and feed their children - arguably most humans are enslaved.

And of course recently the world has finally heard of new crimes such as grand scale theft of intellectual property and commercial property, theft of privacy and human rights, of hearts, bodies and souls. There is nothing much left for the miscreants and the mad to steal, other than life on earth itself, and they are now working on that - building their bigger and more powerful nuclear missiles, their spy networks and their missions for the obscenely rich to move onto other planets once they have taken all they can from planet earth - yes, these follies are all facts. Do they realise that is what the pyramids were built for - for the greedy elite to escape to somewhere better. Such madness has long existed on this planet. The insane ramblings of despots, dictators and other detritus are not new. An endless parade of such fools has led us down
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(Editorial - continued from page 4)

this awful path that we still seem to be forced to tread. It is almost an insane joke, that the madness and vanity of some men has been an astonishing and constantly repeated truth on this planet.

If this is a bit dramatic and a bit direct, I am sorry. Someone has to stand up and speak the truth. Someone has to tell these wicked 'emperors' that their disgusting persons are totally naked and their evil is transparent and the revulsion the planet has for them is totally real. Step away from your sycophants and lap dogs and see stark reality.

Robbing, murdering and torturing is easy – doing something decent, constructive, creative, compassionate and just, with courage, intelligence and foresight, is true power. If they aspire to some prehistoric grab for power and wealth using brute force and ignorance, then they are merely ignorant brutes and do not seem to even have the basic faculties to understand what they are doing. They would deserve our pity if their deeds were not so terrible and base.

The case and means for mass financial reparation for crimes against humanity

Can we rely on governments peopled or held sway by the criminal classes to act to save the planet for a while longer? Probably not. But we can stop supporting them and buying their products. All decent countries should add hundreds of percent in the form of a 'pollution tax' to the price of their wares, with the money raised put toward cleaning up the mess made of this planet – if not we just don't buy anything from polluters at all.

The political miscreants whitewash their culpability at the basest level, with attacks against free speech and free press and labelling the truth as 'fake news' while dispersing their lies as real news. But we have all become immune to their lies and are totally disillusioned with those who claim to represent us politically; with those who assume we are that stupid that we believe what comes out of their mouths.

Often those who support such dictators just want to stay alive a bit longer and lack the courage to stand up against them, or worse, hope to get some of the crumbs that fall from their slobbering mouths. It is time we all developed courage, the dictating and the dictated to.

COP 24 – a 'success' or a 'cop put'

COP24 is the informal name for the 24th Conference of the Parties to the United Nations Framework Convention on Climate Change held in Poland in December 2018.

It was a follow up to the Paris Climate Agreement in December 2015, where parties to the UNFCCC reached a landmark agreement to combat climate change and to accelerate and intensify the actions and investments needed for a sustainable low carbon future. The Paris Agreement was built upon the

Convention of 1992 built itself upon the Vienna Convention for the Protection of the Ozone Layer, 1985. In these events both political and scientific groups were recognised.

The Poland Convention was for the 194 countries and regions participating to agree on rules and guidelines for carrying out their commitments.

The 'elephants in the room' however were that Donald Trump announced in June 2017 that the United States would withdraw from the Paris Agreement in November 2020 – the soonest that any nation can actually do so. Secondly, although the countries responsible for 97 percent of global greenhouse gas emissions had pledged to make cuts, the initial reductions suggested were not enough to keep global warming below two degrees Celsius.

In other words, one of the two greatest emitters of greenhouse gases had refused to take part and those countries left in the pact were not doing enough nor in a timely fashion.

A delegation from the Harvard Project on Climate Agreements at the conference, however advised that there were significant gains in two key areas.

Nations agreed on uniform rules for measuring and reporting their own performance in cutting emissions. There also were intensive discussions of how to connect reduction efforts across regions, nations and sub-national areas, which offer many economic and other benefits.

With the above losses the convention's aim has essentially been 'white anted' and the withdrawal of one of the biggest global polluters will provide excuse for other countries to withdraw.

The reduction of targets also puts into jeopardy any great advances by the group of nations.

While tiny Pacific countries that are gradually being eaten away by rising sea levels seem to be aware of the problem it seems humanity may have not suffered sufficient economic losses, fires, hurricanes, floods, crop failures etc to contribute positively to proper solutions.

Based on the concept of 'I'll only do it if you do it first' a small step forward was an agreement on uniform treatment, essential for addressing the threat of climate change, because increases in emissions are mainly coming from the large emerging economies: China, India, Brazil, Korea, South Africa, Mexico and Indonesia. And some of these countries are not as economically robust as many other nations.

A lot of moving around of figures and paperwork and various schemes were also evaluated but they are not very helpful unless there is a cut in real emissions and this fact seems to have been missed by those saying advances were made on some issues. The only sign of success will be a complete dropping of emissions, a lowering of sea levels and an increase in the size of Arctic and Antarctic ice sheets.

Fixing 'global warming' is also rather useless if we still pollute the land and the seas and deplete the biosphere. Otherwise it is just a choice of means of planetary destruction.

A successful outcome would have been a unilateral decision to not only fix carbon emissions but positive steps to restore the entire ecosphere of the planet.

The next meeting now will take place in Santiago, Chile as after climate change skeptic Jair Bolsonaro was elected president, Brazil reversed its plans to host the next UN climate conference in 2019.

This highlights the greatest danger to Climate change – we are still subject to the whims and vanities and economic aims of people, particularly politicians who in many cases arguably are not fit to lead their countries. If we cannot organise fit and proper and intelligent and fair leadership to remedy the damage done to our precious home planet then it does not really matter what was or wasn't agreed. The next buffoon in power will see the ready market place for what was outlawed.

Ironically, the conference being held in Katowice, the coal capital of Poland, which is itself the most coal-dependent country in Europe and among the most polluted really shows more about the mentality of politicians and political leaders than anything else.

Surely the future of the planet should be in the hands of anyone but the politicians. While some industries do adhere to national emission standards, a colleague has suggested that all industries globally should be graded as to their emissions and pollution levels and those products and services not meeting new emissions standards and whose life cycle chain results in gross pollution, should simply not be manufactured or sold. This will provide easily recognisable guidelines for global companies, the majority of which do try to do the right thing. It will also encourage and provide groundwork for innovative solutions to current problem industries.

Those breathing in the fumes in Katowic Poland of course, and those suffering elsewhere on the planet due to emissions causing climate change may have been the BEST people to attend the conference – not those who are sheltered and immune from the realities of life on planet earth in 2019.

Can all the politicians stay home next time and scientists and engineers attend who can then advise the politicians what needs to be done. More representation of those who will inherit our mess would also be wise. Those who will suffer the consequences are liable to act far more decisively.

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Project Management: Science or a Craft?

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Abstract and background

Projects in one form or another have been undertaken for millennia, but it was only in the latter part of the 20th century people started talking about 'project management'. Project Management (PM) is becoming increasingly important in almost any kind of organization today (Kloppenborg & Opfer, 2002). Once thought applicable only to large scale projects in construction, R&D or the defence field, PM has branched out to almost all industries and is used as an essential strategic element for managing and affecting change in modern companies (Kloppenborg & Opfer, 2002; Pinto, 2002). Society has successfully delivered many of the world's wonders without calling it project management, however, the profession of project management is relatively new - it was not until 1958 that the initial steps were made to formalize project management.

Key words: Project management

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Development of Project Management thinking

Project management has been practiced since early civilization. Until 1900 civil engineering projects were generally managed by creative architects, engineers, and master builders themselves. It was in the 1950s that organizations started to systematically apply project management tools and techniques to complex engineering projects (Kwak, 2005). However, project management is a relatively new and dynamic research area. The literature on this field is growing fast and receiving wider contribution of other research fields, such as psychology, pedagogy, management, engineering, simulation, sociology, politics, linguistics. These developments make the field multi-faced and contradictory in many aspects. Moreover, as observed by Wideman (2003), much of what has been written about project management is not built on or does not carefully consider results of former research. This results in "reinventing the wheel" over and over. Thus, it is important to understand the development of the project management research and acknowledge its current state in order to properly address the organization of multi-project companies.

Human beings have undertaken project-like activities for thousands of years, e.g. the nomads had the daily but unique job: survive. As human society accumulates knowledge, creates instruments and organizes them to execute different tasks, projects perceived as complex turned to trivial activities, and new complex challenges arrived. Contradictorily, it is with the industrial revolution and the change from project to mass production that project management developed the basic tools and ideas known and used until today. In this period, H. Fayol establishes the common basis for current project management practices (Uzuegbu & Nnadozie 2015). Taylor's job specification led to WBS (Kwak, 2003). In 1910, Henri Gantt invented the Gantt-Charts, used until today in projects. His work is the forerunner to many modern project management tools including the work breakdown structure (WBS) and resource allocation (Cleland, & Gareis, 2006).

The 50s are considered the birth of modern project management (Kwak, 2003). The role of project manager emerged as the person totally responsible for the entire project. (Stretton, 1994), and classical schedule techniques were developed. In the beginning of the 60s other practices were introduced, such as life-cycle costing, front-end concept formulation,

C/SCSC (Cost and Schedule Control System Criteria), quality assurance, value engineering and WBS (Work Breakdown Structure) (Baccarini, 1999). The 60s and 70s also witnessed a growing interest of intellectuals in the project management field and general management theories have been systematically applied to project management (Morris, 1994), such as the system approach (Shenhar, 1997).

Project management tools and methodology were applied to different types of projects and in sectors other than aerospace, construction and defence (Baccarini, 1999).

In this period two major professional bodies were established: INTERNET (Institute of Project Management Associations) in 1965 (current IPMA – International Project Management Association), and PMI (Project Management Institute), in 1969. These institutions contributed to the legitimising of project management as a discipline.

In the 70s, project management was utilized by companies as a management tool for solving special tasks (Morris, 1994). In this period, the project management field acknowledged the relevance of soft skills and environment. It was recognized that soft skills were necessary for the development of projects and behavior techniques were applied to project teams (Morris, 1994). This development followed the trend in the human resource perspective in the general organizational theory. The influence of external factors such as political and economic factors to the management of projects increased and became vital for project success and hence became a trend in the 70s (Baccarini, 1999). This development followed the development of system and contingency theory. However, the main focus remained on the tools and techniques (Baccarini, 1999).

In the 80s, an organic paradigm for project management emerged (Baccarini, 1999). Project management was recognized as a key instrument in a turbulent environment, and appropriated to almost all kinds of change processes (Fangel, 1993). This growing use of projects in organizations led to increased adoption of matrix or project organizations. At this point, project management crosses again the organization theory field, but this time, the project management field is the one to influence the general management science by proposing a new perspective of management. Different disciplines were developed/included in the project management tools/concerns, such as configuration management, simultaneous engineering, total quality management, partnership and procurement, financing (such as BOOT), risk management. (Stretton, 1994b)

With the development of IT technology in the 80s and 90s, computer-based tools, mainly for scheduling, were developed and diffused (Kwak, 2003). Up to the end of the 90s, Project Management Body of Knowledge and textbooks were published, attempting to create standards in the project management practices and theory development. Since this period, these standards are being developed and further specialized in different areas and sectors. In this period, projects gained strategic importance in companies. Analysis of success factors and consequently ways to reach them gained attention. This rehearsed the traditional understanding of project success.

Challenges such as project definition, involvement of client, i.e. end-user, and an ever increased importance of external factors were closely observed and analyzed. (Morris, 1994)

Today, this project management concept has developed from different fields of application including construction, engineering, and defence with the Main Objective of Producing Maximum Productivity with Minimum Resources (Kwak, 2005).

Lack of Historical Understanding

There is a growing concern in the project management community about the lack of historical understanding of the emergence of project management and the importance of landmark projects. Both researchers in project management (Garel, 2004) and business historians (Scranton, 2008) call for the development of a history of projects and project management. Indeed with the notable exceptions of Peter Morris' work (1994) and the in depth studies of Thomas Hughes (1998) and Stephen Johnson (2002), we actually do not know of any history of project management.

History can help us to better understand the roots of project management and the evolution of current managerial practices. This could lead us to recognize innovative managerial solutions from the past that are still relevant today and contradict the dominant model of project management. Indeed there is sometimes a discrepancy between current descriptions of historical projects and their realities. For example Lenfle & Loch (2010) in a paper in the California Management Review thus demonstrate that the usual statement that the Manhattan project "exhibited the principles of organization, planning, and direction that influenced the development of standard practices for managing projects" (Shenhar & Dvir, 2007) is notoriously wrong.

On the contrary the Manhattan project exhibited managerial practices (typically parallel strategy, experimentation and concurrent engineering) that have been forgotten in favor of a more control oriented approach of project management and are regaining relevance in today's innovation based and fast paced competition (Lo H. et al, 2006). As Janik points out, the "idea that we are smarter, simply because we come later, is a scholarly form of hubris and no less self-destructive with respect to our cultural heritage" (Janik, 2006). Accordingly, a better understanding of history might create an improved understanding of the difficulties in creating, shaping and managing projects and thus add to the empirical wealth of the subject. Another role of project history would be to create a common ground among academics within this domain of knowledge. Consider the importance of the Sydney Opera House project; it makes it easier to transfer knowledge of more complex type, makes it easier for people to talk about and share experience, and could then also lead to theoretical and metaphorical developments, similar to the paradox of the Sydney Opera House project.

It is widely held that history matters in management (Kantrow, 1986; Kieser, 1994) and, therefore, in project management. However, compared to business history and management history, which has had such a profound implication for

management in general and strategic management in particular, project management has been little discussed and scrutinized in a historical light. Therefore it is critical to develop 'Project History' as an important and integral part of project management research that seeks to integrate historical research with project management research.

Engwall (2003) believes that it is necessary to link a particular project to its context and history. By so doing, we will be able to show the influence of a particular project on managerial practices, before and after it's unfolding. So far, although not completely, literature has documented such fascinating projects as the Concorde project (Morris & Hough, 1987), the Erie canal project, the Brooklyn bridge, the Empire State building (Shapiro & Berndt, 1997), the SAGE project, the Atlas project, the Central Artery/Tunnel project, the ARPANET project (Hughes, 1998), to name a few.

Kloppenborg & Opfer

For its 2000 Research Conference, the Project Management Institute supported a research effort into the "current state of project management research." Over a time period of seven months, 92 researchers analyzed "scholarly periodicals and journals, conference proceedings. The analysis spanned the time period from 1960, when modern project management started to become more wide-spread (Archibald, 1987; Fondahl, 1987) to 1999. It was the intent of the project to "learn more about trends, major issues, contributions, and the circumstances surrounding past research; to develop an understandable portrayal of how the theory and practice of project management has evolved, and to obtain recommendations about the future direction for research. Out of more than 100,000 initial sources, the research team created an annotated database of 3,554 records (Kloppenborg & Opfer, 2002).

Kloppenborg & Opfer examined 3,554 articles, papers, dissertations, and government research reports in a study of the current state of project management research in order to identify the state-of-the-art of project management research (Kloppenborg & Opfer 2002). They used the nine knowledge areas described in the PMBOK® Guide (A Guide to the Project Management Body of Knowledge) (Project Management Institute 2000) and identified, that 64% of the documents written in English deal with the typical triangle of cost, time and quality. Only 5% of the papers deal with integration and, more notably, only 8% with communication issues.

This extensive research produced a number of significant conclusions. It showed that scholarly interest in PM has increased significantly during the 1990s, supporting the growing importance of PM: Of the articles included in the annotated database, 60% were published in the 1990s, 29% in the 1980s, 7% in the 1970s and only 1% in the 1960s. The knowledge areas most frequently cited were the triple constraint areas of PM, namely cost (28%), time (24%) and quality (12%). The industries most often represented in the PM context were Construction and Information Systems (21% each), followed by Education (8%). The study found a distinct shift in topics of interest during decades: in the 1960s, most research focused on large, defence-related projects. In the 1970s, the research focused

on cost and schedule control, performance measurement and WBS and life-cycle management. While cost/schedule control remained a topic of major research interest during the 1980s, research started to include team building, quality and knowledge management related topics. The 1990s saw an increase in HR related topics such as team building and leadership development, as well as a focus on risk management (Kloppenborg & Opfer, 2002; Pinto 2002).

Despite the numerous publications, an explicit theory of project management seems to be missing. Kloppenborg & Opfer state that the theory of project management research should be evaluated in more detail. Koskela & Howell argue that there is an implicit and narrow theory in project management at the present time, which has to be developed, extended and enriched (Koskela & Howell 2002b). They differentiate between the theory of project and the theory of management and identified missing aspects in both categories of the current project management theory. They claim that a paradigmatic transformation of the discipline of project management is needed. But the problem remains unsolved. They see a potential improvement through concurrent development of theory and practice.

A number of other projects have attempted to provide an overview over the field of PM (e.g. Urli & Urli 2000; Zobel & Wearne, 2000). Among those, one study refined the above quoted PMI project with a specific focus on IS/IT related literature (Tesch, Kloppenborg & Stemmer, 2003), which resulted in 784 records from 223 different journals. In a discussion of those articles with professionals in the field, one of the main conclusions reached was that "IS/IT academic research should be examined frequently for the possibility of existing successful models that may offer relevance for IS project management issues" (Tesch, Kloppenborg & Stemmer, 2003). In addition, practitioners voiced specific interest in research on factors contributing to successful project completion and risk management. Concern was voiced that some of the more advanced research was not related to everyday PM demands and problems (Tesch, Kloppenborg & Stemmer, 2003).

In addition, a number of journals were classified as proceedings, academic or practitioner Journals. Based on this classification, the majority of articles selected (60%) were published in practitioner journals, 37% of articles were found in academic journals with the remaining 3% being published in proceedings. Citation analysis was used to determine the most commonly cited PM articles in the sample journals (Katerattanakul & Hong, 2003). The articles are being classified by key words and subject areas according to the PM Body of Knowledge. Previous literature has pointed out that practitioner oriented journals and proceedings tend to focus more closely on real life problems (Tesch, Kloppenborg & Stemmer, 2003; Zobel & Wearne, 2000).

Kloppenborg & Opfer

There's a huge gap between research and practice in most disciplines. Project management is no exception. Yet, research is important because, among other things, it gives rise to new techniques and perspectives, and also confirms (or disproves!)

the often assumed utility of existing practices. The paper entitled, *Project Management Research – The Challenge and Opportunity*, published by Aaron Shenhar and Dov Dvir in the June 2007 issue of the *Project Management Journal* dealt with research in project management.

The authors began by stating that project management is one of the fastest growing disciplines. Many initiatives in organizations are managed as projects, even if they aren't labeled so. The authors observe that, "...in a paradoxical way, project failures, delays, and disappointments are much too common to be ignored...there seems to be an alarming gap between the needs of the discipline and what we know in order to fix them. From a research perspective there is a great opportunity to help close this gap..." Their stated aim is to record some observations on the challenges and opportunities in project management research, in order to stimulate discussion about the role of research in academics and industry.

As the authors point out, people have been engaged in creating things since antiquity. The creation of large monuments such as the pyramids would have required some degree of organization, planning and coordination of the efforts of a large number of people, regardless of the specifics of how that might have been done. In other words, these efforts were all projects that had to be managed somehow. The authors define a project as, "a temporary organization and process set up to achieve a specified goal under constraints of time, budget and other resources" and project management as, "the managerial activities needed to lead a project to a successful end." They claim that modern project management, as a discipline, arose from the invention of the Program Evaluation and Review Technique (PERT) in the late 1950s, and take the position that the PMI's project management standard is the premier standard of the day.

The authors admit that the paper presents their subjective view of challenges and opportunities in project management research. Given this, it is perhaps unfair to read too much into what they say. Yet, it is instructive to look at an implicit assumption they make. It is clear from some of their remarks (and to a lesser extent the references at the end of the paper) that the authors use PMI standard as the basis for their discussion. This, quite naturally, affects their arguments and conclusions: i.e. everything discussed is viewed through the lens of that standard. Perhaps this is unavoidable: one has to make some assumptions to make any progress at all! In my opinion, though, authors of research papers should highlight their assumptions and limitations thereof, so that readers are fully aware of them.

To move on with the review, it is evident that despite all our methodologies and experience, project performance is alarmingly low. The authors quote statistics from the Standish Report and other studies to emphasize this. They concede that some failures can be ascribed to neglect or lack of planning, but highlight – through examples – that even well-managed and planned projects fail. Reasons for this are varied. For example, the original Iridium Project was deemed a failure because it did not take into account future business and technology

trends. The construction of Denver International Airport is another example of high-profile failure. In that case, the reason for failure was that the automated baggage-handling system which was relatively unproven (and thus high risk) was treated as a standard well-proven system. On the other hand, the Sydney Opera House is now deemed a huge success despite being a classic example of project management failure – massively over time (by 16 years) and over budget (\$100 million against an original budget of \$ 7 million).

Citing these examples, the authors note that the problem is not with processes, rules or tools, as project management has plenty (perhaps too many!) of these. They suggest that the problem is at a conceptual level rather than process or practice, and that what's required is a new understanding of what the discipline is about. This, they say, is the responsibility and challenge of future research.

After outlining the history of the development of project management as a discipline, the authors conclude that there is no central paradigm underlying research or practice of project management. They reckon that inspiration for new ideas may be found in other, allied areas such as: Technology and Innovation Management Research, New Product Development Research, Entrepreneurship Literature and Operations Management. Research in technology/innovation management and new product development is more mature than project management research, and hence may suggest fruitful directions for future work. This has already started to happen: many project management researchers are focusing on new product development. Operations management offers another complementary direction; Goldratt's critical chain technique is the best known example of a project management technique that emerged from operations management.

The authors believe that project management researchers have largely ignored developments in the above fields – and hence there are significant research opportunities to be exploited. This process has already begun: researchers are indeed looking to other fields for inspiration and ideas, as evidenced by the growing number of cross-disciplinary research papers in project management journals. On the flip side, most of these papers are written by researchers in project management, very few by those working in other fields. The reason for this, as the authors rightly point out, is that project management still has a low profile in management research and business schools. They comment that very little project management research is published in "prestigious" journals. This is true enough; research published in a high-profile journal is more likely to be read widely. Finally they comment that there is a disconnect between project management research and practice. It should also be noted, though, that this problem is universal – the gap between academics and practice exists in all disciplines, not just project management.

Based on the current state of project management research and the issues listed above, the authors propose a "wider research agenda to address these challenges and bring project management research to the forefront of the academic world". The authors suggest two perspectives for future research:

- The problem-driven perspective: This view focuses on solving specific project management problems such as scheduling / resource allocation and time overruns to name just two. Typically, solutions to such problems emerge from other fields. For example, solutions to scheduling and resource allocation problems have come from operations research and network theory; and solutions to time overruns have come from operations management (critical chain). The problem with the problem-driven perspective is that there is no unifying theme. Which takes us to the next perspective

- The central paradigm perspective: This refers to a central, unifying theme for the discipline – or as the authors put it, a view of what project management is about. The authors identify three views:

- o Operational/process view: which views a project as a sequence of tasks to perform according to a plan.

- o Team/leadership view: which considers a project as an organizational unit that has to be managed (and lead, motivated etc.).

- o Strategic/business view: in which a project is considered to be a business-related activity, which (presumably) forms a part of the organization's strategy.

Each of the above perspectives is based on different assumptions, metrics of success and also a different view of what it means to “manage a project.” The authors correctly recognize that, “Although each direction is a world of its own, the real challenge is to combine them all into a unified view.” They go on to state that, “success in project management can only be achieved by an integrated, holistic view of the entire landscape of the project.” The three perspectives are, in fact, complementary; neglecting any of them will lead to project failure. As the authors recognize, progress in these wide-ranging, diverse areas will require a multidisciplinary approach. Finally, the authors address the issue of publication of research in “leading” (aka “prestigious”) journals. They believe that raising the profile of project management in the broader world of management academia can be achieved by a) improving the acceptance rate of project management papers in highly-rated management journals and b) improving the standing of project management journals in academia. In conclusion the authors make the following observations:

- Project management is still evolving as a discipline, and is yet to establish its position amongst traditional management disciplines.
- It lacks a strong theoretical framework and a coherent set of guiding principles
- It is perhaps too complex to have a single underlying theory, but the interdisciplinary nature of the field and the variety of research challenges may help attract established researchers from other fields as well as young researchers starting out on an academic career.

The authors point to significant new opportunities and a bright future for project management research.

Project Management as a Science

The development of a body of theory is typical of a well-established profession, such as law, medicine, architecture, accounting, and nursing. Mastery of theory, along with mastery of practical skills of the field, is a hallmark of professionals. Indeed, according to Fugate and Knapp, reliance on the theoretical is the single most important factor distinguishing a profession from a craft ((Fugate & Knapp 1998).

In their analysis of project management research, spanning forty years, Kloppenborg and Opfer (2000) have nothing to report on the theory of project management. This extraordinary silence on the theoretical is puzzling; it is either conceded that there is no theory of project management, or it reflects the opinion that the theoretical is not significant from the point of view of project management.

It is the poverty of current theory that explains the other problems of project management, such as frequent project failures (Kharbanda & Pinto 1996), lack of commitment towards project management methods (Forsberg & al. 1996) and slow rate of methodological renewal (Morris 1994). Thus an explicit theory is the crucial and single most important issue for the future of the project management profession.

Project Management as a Science

A theory consists primarily of concepts and causal relationships that relate these concepts (Whetten 1989). It is possible to broadly characterize a target theory of production/operations management (Koskela 2000). This characterization applies also for project management, being a special type of production/operations management. A theory of project management should be prescriptive: it should reveal how action contributes to the goals set to it.

Secondly, there are internal goals, such as cost minimization and level of utilization. Thirdly, there are external goals related to the needs of the customer, like quality, dependability and flexibility.

An explicit theory of project management would serve various functions. In prior research, the following roles of a theory have been pinpointed (Koskela 2000):

- A theory provides an explanation of observed behavior, and contributes thus to understanding.
- A theory provides a prediction of future behavior.
- On the basis of the theory, tools for analyzing, designing and controlling can be built.
- A theory, when shared, provides a common language or framework, through which the cooperation of people in collective undertakings, like project, firm, etc., is facilitated and enabled.
- A theory gives direction in pinpointing the sources of further progress.

In prior literature, it is generally seen that there is no explicit theory of project management (Shenhar 1998, Turner 1999). However, it is possible to find statements from the PMBOK Guide or the work of leading scholars on project management that approximate the definition of a theory or from which a theory can be deduced. The PMBOK Guide states that projects are composed of two kinds of processes: project management processes and product-oriented processes (which specify and create the project product). Project management processes are further divided into initiating, planning, execution, controlling and closing processes.

According to Turner (1993), scope management is the *raison d'être* of project management. He defines the purpose of scope management as follows: (1) an adequate or sufficient amount of work is done; (2) unnecessary work is not done; (3) the work that is done delivers the stated business purpose. The scope is defined through the work breakdown structure (WBS). Indeed, a review of the PMBOK Guide reveals that activities and tasks are the unit of analysis in the core processes of project management, like scope management, time management, and cost management, and that their management and control is centralized (Morris 1994). The transformation theory (or view) of production, which has dominated production thinking throughout the 20th century is valid in Project management. Starr (1966) in the transformation view, production is conceptualized as a transformation of inputs to outputs. There are a number of principles, by means of which production is managed (Koskela 2000).

The PMBOK Guide divides project management processes into initiating, planning, execution, controlling and closing processes. A central idea is that these processes form a closed loop: the planning processes provide a plan that is realized by the executing processes, and variances from the baseline or requests for change lead to corrections in execution or changes in further plans.

The planning of projects is thoroughly described from the point of view of different knowledge areas in the PMBOK Guide. The planning processes are structured into core processes and facilitating processes. There are ten core processes: scope planning, scope definition, activity definition, resource planning, activity sequencing, activity duration estimating, cost estimating, and schedule development, cost budgeting and project plan development. The output from these processes, the project plans, makes up an input to the executing processes.

How is the project plan executed? On this aspect, the PMBOK Guide is puzzlingly brief-worded. The only direct reference to the actual interface between plan and work is with regard to work authorization system. The underlying theory of execution turns out to be similar to the concept of job dispatching in manufacturing where it provides the interface between plan and work. The basic issue in dispatching is allocating or assignment of tasks or jobs to machines or work crews, usually by a central authority. According to a modern definition, job dispatching is a procedure that uses logical decision rules to select a job for processing on a machine that has just become available (Bhaskaran & Pinedo 1991).

The PMBOK guide divides the core process of controlling into two sub-processes: performance reporting and overall change control. Based on the former, corrections are prescribed for the executing processes, and based on the latter; changes are prescribed for the planning processes. Project management seems to be based on three theories of management: management-as-planning, the dispatching model and the thermostat model. The first is evident from the structure and emphasis of the PMBOK Guide.

The third is very clearly embodied in the closed loop of planning, execution and controlling. Neither theory comes as a surprise. Management-as-planning has been the widely held – even if most often implicit - view on intentional action in organizations up to now (Johnston & Brennan 1996). The dispatching model, closely associated with management-as-planning, has been common in industrial engineering from the beginning of the 20th century. Likewise, the thermostat model has been the dominating view on management in the 20th century (Gigliani & Bedeian 1974).

Is project management based on the best available theory?

The theory of projects as transformation is not the best available; rather it has to be augmented. The flow view of production, firstly proposed by the Gilbreths (1922) in scientific terms, has provided the basis for IT and lean production. Hopp and Spearman (1996) show that by means of the queuing theory, various insights which have been used as heuristics in the framework of IT can be mathematically proven.

The major difference between the transformation view and the flow view is that the latter includes time as one attribute of production. Because time is affected by the uncertainty in the production process, as well as interdependencies between tasks, the focus is directed towards uncertainty and linkages, which are not acknowledged in the transformation view.

Regarding the goals of project management, the flow view especially addresses the goal “unnecessary work is not done”. In the flow view, the basic thrust is to eliminate waste from flow processes. Such principles as lead time reduction and variability reduction are promoted. In the value generation view, the basic thrust is to reach the best possible value from the point of the customer. Axiomatic design developed by Suh (2001) advances further the principles along which requirements should be assigned to product subsystems, a significant issue of value generation.

The major difference between the transformation view and the value generation view is that the customer is included in the conceptualization of the latter. Whereas the transformation view assumes that customer requirements exist at the outset, and that they can be decomposed along with work, the value generation view admits that at the outset, customer requirements are not necessarily available or well understood, and that the allocation of requirements to different parts of the (project) product is a difficult problem.

The value generation view provides for an explanation on the third goal of project management, delivering the business purpose. Principles related to rigorous requirement analysis and systematized flow down of requirements, for example, are forwarded. Again, the prescription is very different in comparison to the transformation view, which more or less accepts the requirements as they are.

It has been argued that these three concepts of production are not alternative, competing theories of production, but rather partial and complementary (Koskela 2000). What is needed is a production theory and related tools that fully integrate the transformation, flow and value concepts.

There is another approach to management, called management-as-organizing, which has been presented as a counterpart to management-as-planning (Johnston 1995, Johnston & Brennan 1996). Here, the structured nature of the environment may contribute to purposeful acting. Another important difference to the management-as-planning model is that the agent consists of interacting sub-units, i.e. they are capable of sensing, planning and acting. Communication is non-hierarchical, based on interaction between sub-units. In this approach, management involves design, co-ordination and enabling of otherwise autonomous activities.

The proponents of the management-as-organizing model have presented several strands of critique against the management-as-planning model (Johnston & Brennan 1996). First, it has been held that it is not generally possible to maintain a complete and up-to-date representation of the current circumstances and the plan to change them. Secondly, the absolute separation of management and execution is not seen to adequately correspond to organizational reality. Thirdly, the plans push tasks to execution without taking the status of the production system into account. The last two aspects mean that this models "leaves the task of management essentially uncoupled from everyday activity" (Johnston & Brennan 1996).

It is very difficult to maintain an up-to-date plan, and thus the tasks pushed by the plan do not correspond to reality, i.e. their prerequisites in terms of predecessor tasks (or other inputs) do not necessarily exist. This leads to the situation that a major share of tasks to be commenced, when pushed by the plan, chronically lack one or more of their inputs (Johnston & Brennan 1996).

The dispatching model could be compared to starting an engine, which will run at a known rate utilizing planned resources; commitment of those responsible is implicitly presumed. This starting is achieved through communicating the authorization that is giving orders to the responsible party. However, this view has been challenged by the language/action perspective (Winograd and Flores 1986). They argue that the work in organizations is coordinated through making and keeping commitments. The commitment cycle begins with an offer or a request, followed by a promise, performance and declaration of completion. Thus action is coordinated by the commitments people make rather than by central control acting through commands.

In addition to the thermostat model, there is another theory of control, one that addresses learning and improvement. Here, the question was originally about an experiment for quality improvement, where the validity of a specific hypothesis is checked. Then, according to the outcome of the experiment, the improvement method is possibly amended (Shewhart & Deming 1939). However, this can be generalized: all operations can be treated as hypothesis testing, rather than those specified as experiments in advance. Then every operation must be specified, i.e. the hypothesis made explicit – this is exactly what is done in the Toyota Production System (Spear & Bowen 1999). In this way, the root causes for problems can be found, and performance improved.

Toward a theory of Project Management

The emergence of project management is the result from an increasing number of projects and their diversity and intricacy. Nowadays projects can be found in many organizations, and more and more organizations based on projects (consulting, software development, and service companies). The project management profession is becoming more important in corporations, governments, academia, and other organizations worldwide (Kloppenborg & Opfer 2002).

A scientific theory provides means for the understanding of a given domain or area of research. It represents the body of knowledge in that domain and serves as a general framework for practitioners and researchers alike. Thus, a theory can be regarded as a (language) standard for the discussion and verification of ideas and assumptions about a given domain. Although there are numerous publications proclaiming standards and theories about project management (Burghardt 1997, Fowler 2003, Haberfellner 1997, Jenny 1995, Kerzner 1996, Koskela & Howell 2002a, Madauss 1990, Paulk 2002, Project Management Institute 2000), the empirical investigation indicates the need for further research on project management and its foundations (Kloppenborg & Opfer 2002). It is an obvious fact that project failures are (at least partially) caused by communication deficits and misunderstandings caused by the lack of a common language (respectively standard) of project management and its concepts (PM specific terms like task, project, etc.).

From a scientific point of view, we are following the design science paradigm (Hevner, et al. 2004). Design science seeks to create new and innovative artefact (Hevner, et al. 2004). An artefact can be a construct (a vocabulary like in our case), a model (a representation of something), methods (algorithms or practices) or instantiations (prototypes). As Kamlah and Lorenzen (1984) stated, a common language is needed in order to speak about things and objects of the real or imaginary world in a scientific, meaningful and efficient manner. A native language is given to all individuals (e.g. English, German, etc.). Unfortunately, it is barely scientific and imprecise. A scientific language has to be constructed by incrementally defining core concepts precisely and non self-reflective.

There are attempts to create a conceptual model that represents our PM theory. The purposes of conceptual modeling are (1) supporting communication between developers (project

members) and users (stakeholder), (2) helping analysts understand a domain, (3) providing input for the design process, and (4) documenting the original requirements for future reference (Kung & Sølvsberg 1986). A model is defined as an abstract picture of an object of the real or imaginary world with respect to a subject (Becker & Schütte 2004).

Conceptual Model of Project Management

There are attempts to build a conceptual model of project management based on the PMBOK® (Project Management Institute 2000), German Institute for Standardization (DIN) (Burghardt 1997, DIN69901 1989, DIN69902 1987, DIN69903 1987, Fowler 2003, Jenny 1995, Kerzner 1996, Madauss 1990), and practical experience in order to identify the fundamental terms of PM theory. These terms and their relations build the vocabulary of PM and represent the objects and things that have to be managed and monitored in order to successfully conduct projects. From an IS point of view, information that is exchanged within a project always refers to at least one of these terms.

The model, which is modeled using the Entity-Relationship-Method (ERM) (Chen 1976) includes min-max-cardinalities (Becker & Schütte 2004). The conceptual model is the starting point of the ontological examination of the project terms. The conceptual model consists of the fundamental terms and their relations. Each fundamental term is associated with a clear meaning. The fundamental and crucial term (concept) in literature and practice is task. The definition, planning, execution and control of tasks are the source of every activity in project management methodologies. Even the human centric methodologies, like the agile methods, use tasks as a core concept. A task is an objective for purposive human action (Kosiol 1976). Tasks are aggregated to extensive task (task structure). The project at its whole is the most extensive task. Projects are characterized by the assignment of budget, contract, group of resources, the usage of a specific project life cycle, and a well-defined deliverable (DIN69901 1989, Jenny 1995, Litke 1991, Madauss 1990). Activities are the smallest units handled within project management methods.

Tasks are structured by using different levels of abstraction and different types of relationships. This conceptualization of tasks, projects, and activities encompasses concepts like work package, scope, and sub-project that are mentioned in the literature. The usage of phase (procedure) models is a common approach in order to reduce the complexity.

A phase is a factual and logical restricted period of time that is defined by the project management method. The assignment of tasks to phases is carried out by project team members respectively by the project manager. However, the assignment is restricted due to logical constraints (e.g. implementation prior to testing). Every phase has one or more deliverables. The deliverables are the material or immaterial, tangible, and verifiable products like a feasibility study, a detailed design, or a working prototype (Project Management Institute 2000).

A risk is a possible negative deviation from the project objective(s) (Kerzner 1996). Each project is subjected to at

least one risk but not to all risks that are identified. The risks that threaten the project's success are related to the project objectives.

Stakeholders are individuals or organizations, who are involved in the project or in some tasks. The stakeholders influence the result or are the users of the system. The project team members are directly involved and therefore cause costs, use budget, are integrated in the project organization and are responsible for the execution of tasks. Therefore, project members and stakeholder have to be differentiated, although there is accordance in information supply and their influence on the project objectives. The project team members are persons, which are part of the project resources. Resources represent anything needed to perform tasks. The most important resources are persons (staff), who execute tasks. Apart from staff, technical resources like computers, machines, software and tools are used to perform the project, which we subsume by using the term equipment. The resources itself have to be classified by properties, which are useful for the project. In the case of persons, properties are skills. Other resources have functions, which are needed during the project. Skills and functions have to be measured and rated with quality measures.

In contrast to the PMBOK®, the assignment of quality to tasks seems to be sensible for a detailed quality management. However, it may be difficult to obtain meaningful quality measures at the end of each task. Thus, the measurement of the quality that is actually achieved has to be measured at the end of each phase.

Time, costs and quality represent fundamental concepts, which have to be managed in projects. These concepts are usually visualized by a triangle. Time and costs are directly allocated to the tasks and can be measured easily. The expected and adequate quality depends on the deliverable and its objectives (and the customer need or guideline). Thus, quality is always related to a deliverable and an objective. The degree of quality that is actually achieved depends on efficient allocation of resources and efficient task management.

The increasing complexity of the project management task has led to debate about the way projects are currently managed and to the search for new concepts and theories through which to understand and support the project management function. One of the key recent responses to these challenges to project management in the UK was the establishment of the EPSRC Rethinking Project Management research network (Winter and Smith, 2006).

From Project Management to the Management of Projects

There are two dimensions to what has recently been termed the "mainstream" project management approach (Hodgson and Cicmil, 2006). The first approximates to what Peter Morris (1998) describes as the traditional view of project management concerned with the iron triangle (Atkinson, 1999) of time, cost and quality (Kloppenborg & Opfer, 2002) and its associated concern with project delivery as well as the tools

and techniques required. Much, although by no means all, of this understanding of project management has been encapsulated in the attempts of professional bodies to codify their knowledge base in collected bodies of knowledge (PMI, 2004; APM, 2006).

The second dimension of the project management literature defines a broader field, some of which, but by no means all, is represented in the bodies of knowledge. This literature is often critical of the first for being too much focused on the operational delivery of projects and not sufficiently concerned with defining their impact in advance, at a more strategic level. To adopt Morris's terms, this second approach emphasizes managing projects rather than being just concerned with project management. Its focus is the project. It is about accomplishing projects successfully. It is about managing change and transition. Today, as never before, it is value driven. It is about meeting and exceeding customer expectations about getting the 'best bang for their buck', creating value, and shortening implementation schedules (Morris, 1998).

In a similar vein, Lundin and Soderholm (1998) suggest that the narrowest views of project management tend to black box the context of the project. This disregards the phases before and after implementation and the possible impacts these may have on the project; for example, creating momentum in the project in the first instance or learning from the project once it is completed (Lundin and Soderholm, 1998). In the context of long-term service-led projects, project managers are increasingly being asked to deliver value to the contractor and the customer down-stream and beyond the traditional delivery point. According to Morris and Pinto (2004) what is needed is to broaden the focus to cover the management of external and front-end issues, not least technology and client issues (Morris and Pinto, 2004). We therefore need to go beyond the traditional domains of project management theory and consider new insights.

Project Management Research Streams

In general, researchers approach project management from either a social or a technical point of view and do not combine these two interdependent components into an integrated theory of project management. Project management is becoming even more complex with hundreds, sometimes thousands, of interrelated tasks requiring effective control. Additionally, project environments are becoming more difficult to handle and predict, especially with ongoing dramatic technological changes and decreasing product life cycles. Despite the rapid growth of project management it is not yet widely known as a formal and established academic discipline similar to that found in marketing, finance and operation research. This problem may be traced to the fact that there is vast literature available on many aspects of project management but only rare attempts at theory building (Shenhar & Dvir, 2007; Snider & Nissen, 2003; Belout, 1998; Pittman, 1994).

Many research studies in project management suffer from three major flaws. First, the project management literature is fragmented by many studies that focus too narrowly on certain aspects of project management at the expense of others. Lacking a precise holistic view of the project management

process can result in a simplistic view of the entire process, and in some cases, generate only sub-optimal project results. The second shortcoming of the project management literature is that project management theories are still somewhat underdeveloped (Shenhar & Dvir, 2007; Shenhar, 2001; Shenhar, 1998; Shenhar & Dvir, 1996). Indeed, Packendorff (1995) asserts that research literature on the management of projects has failed to establish theoretical explanations for such problems as deviations from plans, costs overruns, and conflicts within or between projects. The third flaw is the abundance of 'inward-looking' perspectives regarding the analysis of different aspects of project management (Packendorff, 1995; Winter, Andersen, Elvin, & Levene, 2006). Researchers often build their work on previous studies in the field while ignoring potential contributions from other disciplines (Shenhar & Dvir, 2007). A significant number of theories and research with potential value for project management actually lie outside the boundaries of the field and should be examined and integrated accordingly.

The first stream of research describes project management as a set of models and techniques derived from the operation research and applied mathematics concepts (McKay & Wiers, 1999; Packendorff, 1995; Pinto, 1998; Söderlund, 2004). Project management is viewed as a set of tools used to plan, organize, monitor, control, and report projects. This approach is based on the assumption that better planning and controlling techniques will improve project management performance. In other words, the solution to project management problems is in the development of more efficient algorithms (Sculli & Wong, 1985; Woodworth, 1989). Many researchers assert that project management research is biased towards technical, quantitative, and hard system approaches (Baker & Wilemon, 1977; Belout, 1998; Turner, 2003). The dominance of the technical approach to project management may be explained by the heavy influence of the construction field (Crawford et al., 2006).

The mechanistic approach is predicated on the notion that the project manager's role is to develop and strictly adhere to a perfect plan (Dvir, Raz, & Shenhar, 2003). Pollack (2007) argues that the mechanistic view of project management assumes a strong causal connection between management actions and organizational outcomes. Thus, perfect predictions are now possible on the basis of deterministic causal laws (Ackoff, 1979; Jaafari, 2003).

Mintzberg, Quinn, & Voyer (1995) stress that organizations deal with dynamic situations in which realized (final) plans are not originally intended (initial) plans, but rather a mix of emergent and intended plans. In this way, it may not come as a surprise that "inadequate planning" is the first reason for project failures in at least 36 studies (Nikander & Eloranta, 1997). In the same way, risk management techniques fail in anticipating real future threats because risk analysis is a static one-time procedure undertaken at the beginning of the project (Nikander & Eloranta, 2001). This may explain why risk management tools are not often used in practice (White & Fortune, 2002). It follows that traditions and assumptions in project planning should be re-evaluated since it is insufficient "to prepare perfectly for an imperfectly-predicted future" (Ackoff, 1979).

Another major criticism of most quantitative techniques is that they assume a linear project management process based on the premise that activities can be ordered in the form of sequential interdependencies (Duncan, 1979; Jaafari, 2003; Packendorff, 1995; PMI, 2004; Sonawane, 2004). In reality, most projects—especially those of great complexity—are non-linear systems with many reciprocal interdependencies (Duimering et al., 2006). Another major problem with most traditional project management techniques is in the close system representation of project management, which overlooks or underestimates the impact of the environment. White & Fortune (2002) consider that 70% of the side effects of using traditional project management techniques can be linked to a lack of awareness of the changing environment.

Project management software can be seen as a subset of the technical approach since almost all traditional techniques are incorporated in software packages. Many researchers believe that the dynamic and heterogeneous nature of project management elements, the interdependence of various participating entities, the complexity of projects, the need for flexibility, and the high degree of coordination required together suggest that information technology has a great potential for managing projects (Doloi & Jaafari, 2002; Fox & Spence, 2005; Fox, 2000; Hegazy, 2002; Hegazy & El-Zamzamy, 1998; Matthews, 1987; Thamhain, 1987). Research to date has focused on increasing the level of flexibility and improving ease of use, but little attention has been paid to the conceptual models embedded in the software (Liberatore, Pollack-Johnson, & Smith, 2001). In general, while project management software packages may differ in some advanced features, they generally share the same underlying concepts (Bobrowski, 1989; Davis & Martin, 1985; Liberatore et al., 2001).

One may argue that project management software packages are flexible tools that can cope with unexpected changes in the project management situation. However, the flexibility of any technology is limited to the predefined range of possibilities programmed in them (Duimering, Safayeni, & Purdy, 1993). These limitations in project management software may explain why project managers rank project management software as the tool with most drawbacks, especially with complex projects (White & Fortune, 2002).

Many researches assert that primary problems of project management are not merely technical, but also human (Belout & Gauvreau, 2004; Hegazy, 2002; Packendorff, 1995; Posner, 1987). Despite this view of social aspects of project management, some researchers argue that human issues are still overlooked (Belout, 1998; Laplante, 2003; Metcalfe, 1997). This shift towards a more social approach to project management is based on the premise that project outcomes can be enhanced by first changing the behaviors of people involved in the process. The main areas of interest are organizational culture, organizational support, organizational commitment, learning, leadership, decision-making, team building, knowledge building, conflict management, and communication skills (e.g. Bresnen, Edelman, Newell, Scarborough, & Swan, 2003; Brookes, Morton, Dainty, & Burns, 2006; Jackson & Klobas, 2008; Johns, 1999; Nordqvist, Hovmark, & Zika-Viktorsson, 2004; Wang & Armstrong, 2004; Wong & Cheung, 2008).

The “technical” approach to project management suffers from a myopic focus on technical components of the project system with little consideration for the social context. In the same way, many social studies of project management often lack a clear specification of the larger technical task contexts of a project, which may either constrain or facilitate both role behavior and social relations among project participants. Despite the fact that socio-technical interactions are central to the study of project management as a whole, only a few serious studies have tried to capture these complex interactions. The socio-technical approach to project management is promising because it examines the interactions among people, tasks, and technologies simultaneously (Bostrom & Heinen, 1977; Griffith & Dougherty, 2002; Pasmore & Sherwood, 1978; Shani, Grant, Krishnan, & Thompson, 1992).

At a basic level, it can be argued that whenever human and technical elements are put to work, socio-technical interactions will always occur, whether intended or not. The technical system may be defined as referring to task requirements and formal procedures and include the necessary technologies to achieve the desired results. On the other hand, the social system may be defined as having task dependencies with their coordination requirements that can lead to the development of group social norms for task performance (Palvia, Sharma, & Conrath, 2001). A similar line of thinking developed by Bavelas et al. (1983) and Scott (1987) asserts that any task dependencies will result in associated social structures since social and formal task structures do interrelate in the context of task performance. Project management can be viewed as a manifestation of a complex pattern of interrelations and interactions between individuals and groups that are pursuing different parts (i.e. subtasks) of a project.

Overall, the socio-technical approach essentially views project management as interacting subsystems in which projects are delivered by establishing a fit among various groups with different, and possibly competing, expectations and goals. Future research on socio-technical aspects of project management can shed further light on the development of project management theories as a means of understanding the process itself. Such analysis will help determine the nature of interdependent interactions and the effects these interactions have on the project management process and the outcome of the project as a whole. Additional research is needed to refine the concept of socio-technical systems, as that concept applies to project management. Currently the concept is underdeveloped and presents no clear methodology on how to capture and analyze complex interactions successfully.

Conclusion

The high number of publications in the project management discipline indicates the importance of project management as well as its immaturity. The low success rate of projects implies serious financial risks as well as missed schedules and inadequate quality, posing serious threats for organizations that are based on projects. Project failures are at least partially caused by communication deficits and understanding problems. The vast number of publications prevents a sound assessment of methods, tools and techniques in project management.

Moreover, the discipline is characterized by a huge number of methods that provide solutions for parts of the overall problem. However, integrative approaches are needed in order to reflect the complexity of the project holistically.

Management by projects plays a central role in organizations of the future where project management needs to be described in terms of the fundamentals applicable to business development. From the literature surveyed a trend developed where project management from the perspective of industrial development can be seen as the past, from the perspective of business development as the present and from social development as the future.

It is no exaggeration to claim that project management as a discipline is in crisis, and that a paradigm change, long overdue, has to be realized. Concepts and propositions from a number of areas of theoretical development in the social sciences, offer the potential to rethink project management in ways that could shed light on some of the complexities of modern major projects.

The present doctrine of project management suffers from serious deficiencies in its theoretical base. Firstly, it rests on a faulty understanding of the nature of work in projects, and deficient definitions of planning, execution and control. Secondly, the theoretical base has been implicit. It can be argued that these shortcomings have led to three classes of problem.

Firstly, project management has not achieved the goals set to it: it does not perform in a satisfactory way. In small, simple and slow projects, the theory-associated problems could be solved informally and without wider penalties. However, in the present big, complex and speedy projects, traditional project management is simply counterproductive; it creates self-inflicted problems that seriously undermine performance.

Secondly, the lack of theory has rendered education and training more difficult and has hampered effective professionalization of project management. Lacking theory, project management cannot claim, and will not be granted, a permanent and respected place in higher Education institutions. Also, the lack of an explanation of project management, to be provided by a theory, has slowed down the diffusion of project management methods in practise.

Thirdly, the renewal of project management has been hampered by the lack of theory. Anomalies, deviations from theory-predicted outcomes, have been observed long since in project management, but their cause has been misinterpreted and the project management community has not acted on them.

The important functions of a theory, regarding continual validity testing and giving direction for further progress, have neither from the viewpoint of research nor practice been realized. The present evidence is strong enough for the claim that a paradigmatic transformation of the discipline of project management is needed. The transformation required implies that a more intimate relation between theory and practice

must be created in project management. Theory and practice have to be developed concurrently, similarly to other science-based fields, where theory is explicated, tested and refined in a continuous dialogue between the scientific and practitioner communities.

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Status, distribution and dynamics of Chilgoza Pine (*Pinus gerardiana* Wall) Forest in Suleiman Mountain Range, Pakistan

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Abstract

The Suleiman Mountain range has many economically and environmentally valuable forest species, including *Pinus gerardiana*, *Pinus wallichiana* and *Olea ferruginea*. In district Sherani, pure stands of *Pinus gerardiana* Wall. ex D. Don. exist in the forest, covering 261 Km² area. This valuable source is facing higher threats from illegal and unsustainable harvesting, lack of income generation for livelihood and social conflicts between the communities. Lack of proper monitoring by governmental sectors and social checks along with people's greed to earn more to meet their requirements by cutting and selling trees, have triggered the deforestation of *Pinus gerardiana* forest.

Key words: Chilgoza, Distribution, Economic valuation

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Introduction



Suleiman Mountain Range (SMR) also famous for its highest peak known as Solomon's Throne (Takht-I-Sulaiman) is an extension of the Hindu Kush. SMR lies between 31° – 36° North and from 69°- 59° East at an elevation ranging from 500 to 3441 meters (Khan, 2015). SMR lies at the junction of three provincial borders of Punjab, North West Frontier Province (NWFP) and Balochistan.

A world's pure stand of Chilgoza (*Pinus gerardiana*) forest exists in Suleiman Range and straddles the border of southeastern Balochistan and NWFP provinces. Arid ecology of Steep mountainous terrain provides the most suitable climatic conditions for the growth of Chilgoza forests. Approximate mean day temperatures range from 37°C in June to 13°C in January. Rainfall is scanty, around 320mm per year, which usually varies with altitude and is more frequent during the winter season (WWF-P, 2014).

Pinus gerardiana belongs to family Pinaceae, and is known as Chilgoza pine which means 40 nuts in one cone. The Chilgoza tree is usually 10-25 m tall with erect branches. The tree bark is very flaky similar to the lacebark pine (*Pinus bungeana*). The leaves are needle-like and cones are 10-18 cm long, 9-11 cm wide in opening condition. Whereas nuts are 17-23 mm long and 5-7 mm broad with a thin shell and rudimentary wing.

Chilgoza pine is listed as near threatened (NT) species according to IUCN red list (IUCN, 2018).

There are many threats to the Chilgoza forest, i.e. unsustainable harvesting, social conflicts, lack of effective organization of resources and income generation. The property rights of Chilgoza forest existing in SMR have been distributed between the Sherani tribe living on both sides of borders known as Largha Sherani in NWFP and Bargha Sherani in Balochistan, based upon social stratification. There is no written record of land settlement. According to tradition every person living in the tribe has equal ownership right over all the resources available in the area. There are three further tribes under the Sherani tribal system (Urooj, 2015). Hassan Khel and Oba Khel are the major owners of Chilgoza forests in Suleiman Range while the Chual khel has a smaller portion of Chilgoza forests. Local people have memorized the ownership record of each sub tribe. The tribe of Bargha has a total 97 Km² area of Chilgoza forest which has been distributed between its sub-tribes Oba khel, Chual khel and Hassan khel each with nearly 85, 5 and 7 km² of forest area. Whereas, the Largha Sherani tribe has a larger forest area, about 164 Km² in the district. Out of the total area, sub-tribes Hassan Khel and Oba Khel have occupied 69 Km² and 95 Km² of forest area.

Being tribal area forests in SMR especially Chilgoza is threatened by unsustainable and illegal harvesting although, Chilgoza forest is protected under the Balochistan Forest Act. Until the early 1970s, the local tribal system provided a reasonably good protection to the Chilgoza Forest but subsequently, the same system has not remained effective due to erosion of traditional social institutions. The lack of a legal or social checks, greed of contractors to earn more, along with the needs of the growing population mainly to meet their daily requirements, and to fulfill certain social obligations, have triggered the deforestation process.

There are multiple natural and anthropogenic sources which are threatening Chilgoza forest Such as natural causes of injuries to Chilgoza trees which include snow, lightning, wind damage, insects and fungus attack.

Heavy snow damages the tree branches. Though, damage by snow is insignificant in the lower forest area and is only happening in the uppermost area. Damage by fast blowing winds is very rare, but do cause damage in some areas. Trees and branches that have fallen down due to wind are brought by owners to the village for personal use or for sale. Fungi and insect borers (*Dioryctria abietella*) attack and damage the Chilgoza cones and feed on the seed pulp resulting in the reduction in fruit production, whereas bark of the branches and trunk become infested by insect borers. Thus sap flow gets hindered which ultimately causes death of the tree after the dryness of branches and trunk. In the Chilgoza forest at the mountain top, trees are often damaged by frequently occurring lightning. Sometime this lightning causes a fire in the forest. Many trees can be seen with broken tops as a result of lightning. According to a local community, incident of forest burning in Kunday Qaisa due to fire happened in the year 1999. Animal grazing is also causing degradation at many

points where the forest needs to regenerate. Besides cutting and selling of Chilgoza trees and its branches as timber it is also threatening the status of Chilgoza percentage Land cover (LC) over an area where the harvesting level is seven times greater than regrowth level. That's why Chilgoza forest cover has been reduced and production has been decreased with the passage of time. The underlying cause of all these threats is poverty of the local community.

Economic evaluation of Chilgoza Nut

Chilgoza nut has more economic value than timber and it is a main marketable product of SMR. Pakistan produced 3500 metric tons of Chilgoza nuts in the year 2017 which is much more than last year's production. The current market price is 3850 rupees per kilogram in Pakistan. Pakistan produced 18% of the Global production. Chilgoza's natural cycle gives a good crop every alternate year.

Price of Chilgoza nut varies due to market supply and demand pressure. With fluctuation in the market, Chilgoza cultivation is an unstable source of income for local communities. Prices have increased dramatically in the last few years, which have made a contribution in increasing the total income of the local community.

Chilgoza nuts harvest is by forest land owners as well as by contract harvesters. Some harvesters do not have land in the Chilgoza forest area so they get a contract from the land owner before harvesting season who get 50% profit from product (nuts) selling in the market. However the contractor manages and bears the labor cost to harvest Chilgoza in the harvesting season. After harvesting, nuts get transported to the local village. Zhob wholesalers bear all the cost of transportation of Chilgoza nuts from village to Zhob city. From Zhob all raw products get transported through small vehicles to Dera Ismail Khan. Then from there, nuts are loaded into big vehicles and transported to a wholesaler operating in Akbari Mandi, Lahore. Wholesale dealers bear the overall cost of transportation from Zhob to Lahore. In Pakistan Akbari Mandi is the largest dry fruit market from where Chilgoza and other nuts transport to local markets of other cities and are also exported to other countries. The market price for selling Chilgoza gets fixed in Lahore on the basis of demand and supply. In Pakistan, Chilgoza nuts are valuable selling items for wholesalers. Retailers buy roasted or raw nuts from wholesalers in Lahore and sell to consumers in different urban cities by charging their retail margin. The biggest exporter of Chilgoza nuts is Dubai, which has the world's largest dry fruit market.

One tree can produce an average 12ft log having a 1.5 ft diameter. Based upon this calculation, estimated total volume of logs could be 17.7 ft³. If it is assumed that 60% of logs incur a loss, then the net volume would be 7.1 ft³ (Iqbal, 1999). The net revenue obtained in the timber market is 370 Rupees which comes to 3337 Rupees per tree. Comparatively, revenue generation from nut selling is greater than timber selling.

Conservation and Management

In the past conservation of the Chilgoza forest in Sherani District was a remarkable question and its management was a great challenge for government and non-governmental organization. This valuable forest has never been managed under a formal management system because of tribal ownership of so many sub-tribes and different social conflicts. But since 1991, World Wide Fund Pakistan started working to promote awareness among local communities to conserve Chilgoza forest reserves by controlling commercial logging (Urooj, 2015). In 1998 the federal ministry also took an initiative to sponsor the project based on the integration of conservation and development program for the Chilgoza forest ecosystem and the Dependent Community in the Suleiman Range. Later on, World Wide Fund conducted two projects on: Chilgoza Conservation in selected villages of Tehsil Sherani, and on Conservation of Chilgoza forest ecosystem through natural resource based livelihood improvement in Suleiman range (WWF-P Factsheet, 2014). The aim of these projects was to build awareness among people and develop a community based organization for Chilgoza forest protection and conservation.

Conclusion

Chilgoza nuts have significantly higher economical market value compared to its timber. If a local community manages its harvesting properly and conserves this resource then this would generate significant income for local communities. This sustainable income would be greater than the existing unsustainable income, generated from timber harvesting. Though WWF-P and federal ministry has worked to some extent, proper legal enforcement is still required for conservation of this unique biological resource.

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Tenants' Satisfaction in Abu Dhabi (UAE): A survey

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Abstract

Tenant satisfaction has become an essential theme in the residential industry. Modernization in housing trends has resulted in several factors that drive the choice and the requirements of tenants and it has an enormous impact on their satisfaction. This research tries to understand tenant satisfaction through a survey conducted by the expatriate community in the city of Abu Dhabi (UAE). Data was collected through twenty survey questions to understand the satisfaction of tenants of villa dwellings, and compound apartment buildings (tenants of 1-4 bedroom-housing facilities). The results of this research can be utilised in the future planning and development of rental properties as well as designing for the reviewing and development of new policies.

Key words: Tenant satisfaction, residence selection, residential sector, questionnaire survey, UAE

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Introduction

Availability of modernised building facilities has led tenant satisfaction to an idealistic level due to socioeconomic factors in addition to the physical conditions (Gibler et al., 2014). The world has become a global village where everyone is on the move to enjoy a better living standard. However, this massive movement of residents requires sufficient residential services. In addition to the economic and infrastructural issues, social factors add complexities for building owners. Current research demonstrates that resident satisfaction level has a close relationship with the factors mentioned above (Azimi and Esmaeilzadeh, 2017). Consequently, understanding and exploring tenant satisfaction remains essential. Satisfaction is an emotional, behavioural and mental phenomenon to evaluate and meet individual needs (Etminani-Ghasrodashti et al., 2017). Tenant satisfaction factors can broadly categorise into internal and external features of a property that contribute towards the overall living condition from the tenants' perspective. Therefore, understanding tenant behaviour in addition to the building's facilities are essential to measure tenant satisfaction. Although research into housing satisfaction holds its footprint since the 1970s, the research in this stream is scarce (Gibler et al., 2014) and past studies are lacking in the implications of a holistic approach to tenant satisfaction (Dinc, et al., 2014).

UAE (United Arab Emirates) has seen an enormous change in their economy due to the oil and gas returns. Ibrahim et al. (2016) stated that rapid growth in the petroleum market and ongoing migration of expatriates had brought the dynamism in the housing market not only in the UAE but within the entire Gulf region. The higher number of expats movement due to a large number of foreign investments has led the UAE to proliferate. The supply in the housing sector, both owner-occupied and rental properties, has changed due to housing and property laws recently changed in the UAE. The housing typology survey conducted by Ibrahim et al. (2016), shows a differential in the property investments in the UAE. Villas are seen as a more economical and culturally fit choice for the local Emirates compared to the apartments which are seen as a priority choice of the expatriates. Furthermore,

due to change in the socio-cultural factors resulting from the influx of expatriates, allocation of land for private and semi-guest areas are becoming part of the house planning. Recent activities in the rental market in Abu Dhabi show changing characteristics of expat's investment in purchasing their freehold properties, as well as leasing villas away from the central Abu Dhabi Island. These activities in the rental market have brought stability for the mid-market tenants, nevertheless they have positioned pressure on the high-end rental market. Lately, the CBRE (2017) report analyses a decline of an annual 8% in the Abu Dhabi residential leasing market. Despite this market uncertainty remains looming; the number of expats and local visitors in Abu Dhabi growing at a pace of 5% annually. To this end, this research adopts a holistic approach to understand tenant satisfaction of both types of properties, i.e. villas and apartments.

Literature review

Tenants are customers who like to enjoy additional services for the cost of rent they pay. Satisfied tenants are less inclined to change their residence due to additive transaction costs in addition to the time they spend on searching and moving into a new property (Gibler et al., 2014). Satisfaction in the building sector is viewed from the physical and non-physical factors (such as social factors) (Voelker et al., 2013). The physical factors include the aspects of the housing facility and related amenities (Aulia and Ismail, 2013). These factors include the indoor air quality, cleanliness of the common areas, and reduced health and safety issues (Voelker et al., 2013). The non-physical factors include fulfilment of psychological needs, housing ownership, better communication with management (if rental

property), security, good neighbourhood and so forth. (Aulia and Ismail, 2013). Choice of a residential building or an apartment that brings highest customer satisfaction is linked with these physical and non-physical (social) factors. Understanding both factors help to make a better decision and proactive planning while selecting a residential property by tenants (Gan et al., 2016).

Several factors count towards the decision management in residence selection, reported, in the residential literature (see Table 1). Earlier research found that structural amenities such as large front and attached garages were seen as the decisive factors in the choice of an apartment (Brown and Cropper, 2001). Whereas, according to Wilkinson (1999), the internal residential conditions that impact on the residents' health are also very critical. Mould, indoor air quality, and dampness inside the house create illness and related health issues specifically among children (Pekkonen and Haverinen-Shaughnessy, 2015, Voelker et al., 2013) and are considered as negative factors. James Iii et al. (2009) developed a model of residential satisfaction through 464,281 online consumer postings of US housing and outlined several factors including parking, noise level, landscaping, safety, building construction, office staff, and maintenance service. Sirmans et al. (2009) examined multifamily housing and outlined transport facilities as the critical requirement. Ibem and Aduwo (2013) confirmed that visual comfort and security; size of living and sleeping areas in the residences and management of the housing estates, respectively are key customer concerns in residential suitability. Following is a list of critical factors impacting the residents' and tenants' satisfaction.

Table 1: Various satisfaction factors identified in the literature

Factors	Authors
Behaviour of neighbours	Brown and Cropper (2001),
Parking facility	James Iii et al. (2009), Gan et al. (2016)
Landscaping	James Iii et al. (2009), Gibler et al. (2014), Gan et al. (2016), Dinc, et al. (2014)
Safety/security	James Iii et al. (2009), Gan et al. (2016),
Maintenance service	Gan et al. (2016), James Iii et al. (2009)
Transport access	Sirmans et al. (2009), Tanzman (1993)
Office staff/management	James Iii et al. (2009)
Building structure	Gibler et al. (2014), James Iii et al. (2009)
House Type	Azimi and Esmaeilzadeh (2017).
Building Outlook	Gan et al. (2016)
Internal residence conditions	James Iii et al. (2009)
Ethnicity	Najib et al. (2011)
Economic status,	Najib et al. (2011)
Sense of sharing	Najib et al. (2011)
Recreational areas	Dinc et al. (2014)

Neighbourhood

James Iii (2008) demonstrates that neighbourhood significantly impacts on tenant satisfaction level. Górczy ska (2008) studied the impact of neighbourhood and found that the majority of the residents were satisfied with their neighbourhood attitude. Results from the hypothesis tests found that a decent neighbourhood reputation links to a more positive attitude toward the place of residence.

Type of property

Wang et al. (2013) suggests that residence type also impacts on tenant satisfaction. Their study shows that housing ownership has a higher level of satisfaction than rented housing. Pekkonen and Haverinen-Shaughnessy (2015) demonstrated a similar fashion in the Finnish household study.

Internal property conditions

Property condition and internal structure of a house or apartment are also seen as a critical criterion for satisfaction. Several authors have found the link between the internal facilities and amenities, and tenant satisfaction (James Iii, 2007, Najib et al., 2011, Dinc, et al., 2014, Gibler et al., 2014). James Iii (2007) reported privacy issues in the US housing survey that resulted from noise intrusion were actually caused due to the internal building structure. This had a negative impact on the residents' lives as shown by the author mentioned above. Results from students' shared housing pointed out that the number of bathrooms, size and cleanliness of bedrooms, and other living areas, as well as the presence of a balcony/patio, has a direct link with tenants' satisfaction. However, due to several limitations, the quality of the internal environment of any residence remains in the hands of the house owners (James Iii et al., 2009). Pekkonen and Haverinen-Shaughnessy (2015) conclude that homeowners cared more for their internal condition such as cleanliness of dwelling, indoor air quality, and thermal conditions, especially during the winter season. Similar results have been found in a study conducted in China which demonstrates that interior environment is a superior resident and tenant satisfaction factor when compared to the external environment.

Access to Transport and amenities

Sirmans et al. (2009) examined the role of external factors and amenities in multifamily housing. In their model, traffic congestion, proximity to work, and access to public transport were the top external factors. Provision of the transportation facilities near the residences is seen as a prominent factor in measuring tenant satisfaction. For example, transport available within 1000 feet from the residence is seen as more expensive, compared with a long distance to the bus or train station. Dinc, et al. (2014) in a Turkish study found that lakes and shopping areas also add to the attraction in the choice of housing selection.

Facilities & Service management

Tenant satisfaction also remains volatile to facilities management service staff. James Iii et al. (2009) discussed that in contrast with the owner-occupied properties, staff and manage-

ment have direct control over the housing environment for rented properties. The author also discussed the link between maintenance of the apartment housing and the age of the tenant. The study shows that maintenance of the building is a driving force of satisfaction for elderly tenants compared to the young who complain less to maintenance staff.

Research Method

Although several papers were found during the literature review on owner-occupied residential housing satisfaction, very little to none emphasised the tenant satisfaction with regards to expatriate tenants. A literature review of 38 journal articles shows a majority of the results are from developed countries and only a few studies are from developing nations. The unique feature of this study is that it focuses specifically on the expatriate community who are currently renting accommodation within a developing country. Data was collected from expatriate tenants by using a questionnaire survey, containing 20 questions. 158 people were contacted for the survey participation; around 58 people did not want to participate. The reason for non-participation was either lack of Tawtheeq documentation (1) formal registration of the tenancy contract), or they were the homeowners. Researchers stopped data collection when they completed 100 survey questionnaires from the respondents. Table 2 provides the data on in which type of accommodation our respondents were living at the time of interview and how much rent they were paying.

Research Analysis

In the section below, various graphical representations present the responses for some of the questions asked in the survey. For the cleanliness of the common area, the majority of the respondents were satisfied with the service provided by the landlord (see Figure 1).

Figure 2 shows the respondents answer the question regarding public transport. Although, the data was not directly collected to see how many of them use public transport one of the questions was related to use of a parking facility which gives some indication of how many of them use cars. Within Abu Dhabi, the only local public transport service is bus services. Mostly expatriates use their own transport if they are well paid. Some low paid expatriates who cannot afford to buy or rent a car either use the bus service to get to work or shopping malls or taxi services, which are relatively cheap. Interestingly, Figure 3 presents the response regarding the accessibility to the main highway, and all of the respondents knew how far away the highway was. That means, most of our respondents either currently drive or drove a car in the past.

Figure 4 shows that majority of the respondents are only satisfied with the overall outer appearance of their rental accommodation. This infers that landlords are not necessarily looking after the aesthetics of the property. Respondents were also asked about the recreational facilities available within their apartment or villa compound including gym, pool, kids playing area, parking, and so forth. Most of the residents mention some kind of recreational facility either provided or (1) <https://dmat.abudhabi.ae/en/ADM/tawtheeq/Pages/home.aspx>

Table 2

No. of respondents	House/Apartment Type	House or Apartment Rent in (AED thousands)
18	Free standing Villa(3 bed or more)/Villa Compound	160 - 200, >200
8	studio Apartment	<50, 50-80
10	1-bed apartment	50-80
34	2-bed apartment	80-100/100-130
28	3-bed apartment	130-160
2	4-bed apartment	160-200

Figure 1

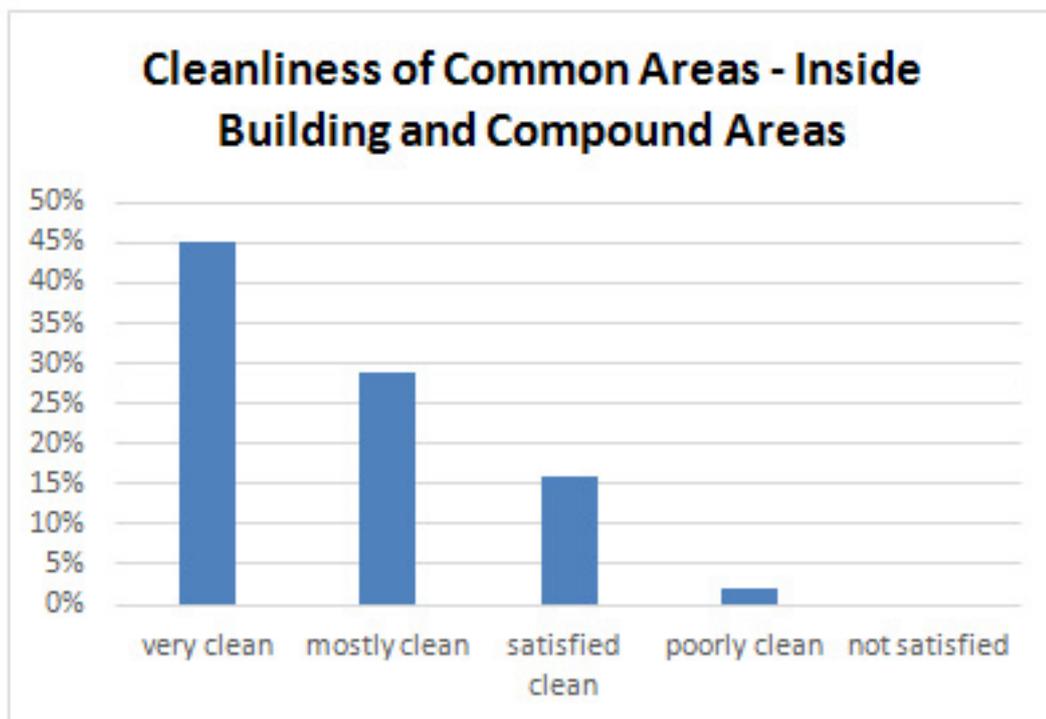


Figure 2

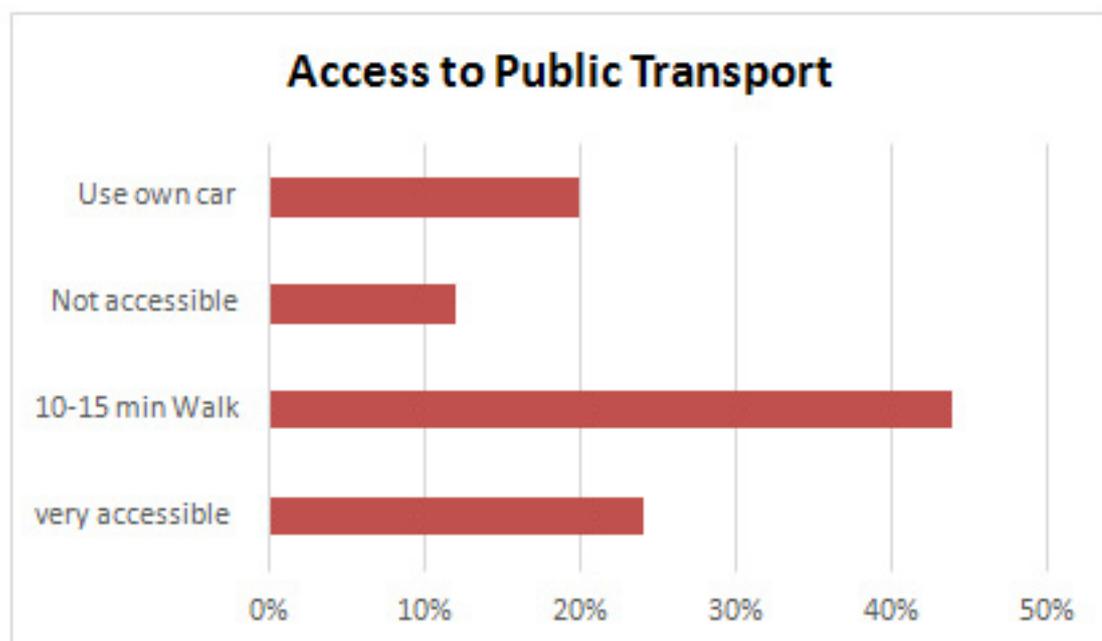


Figure 3

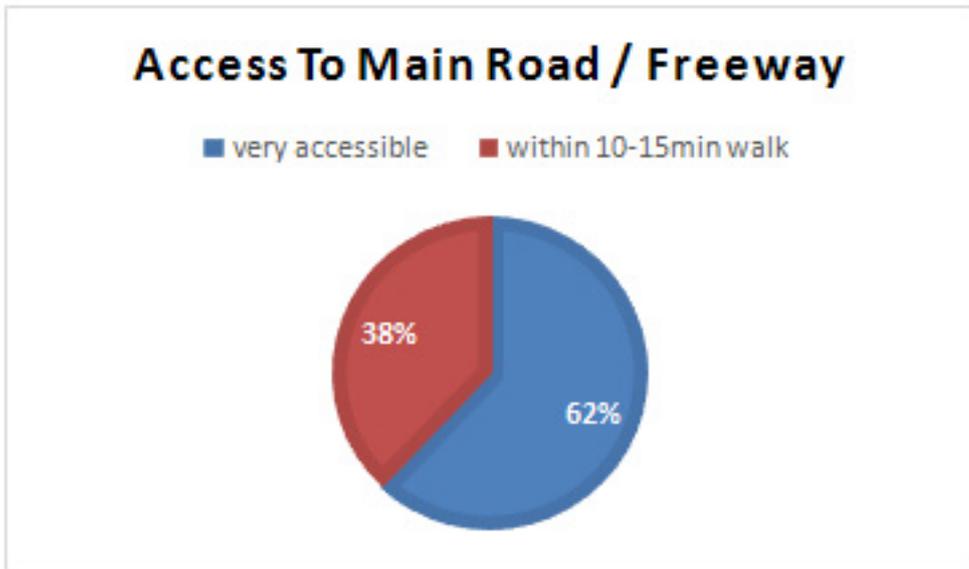


Figure 4

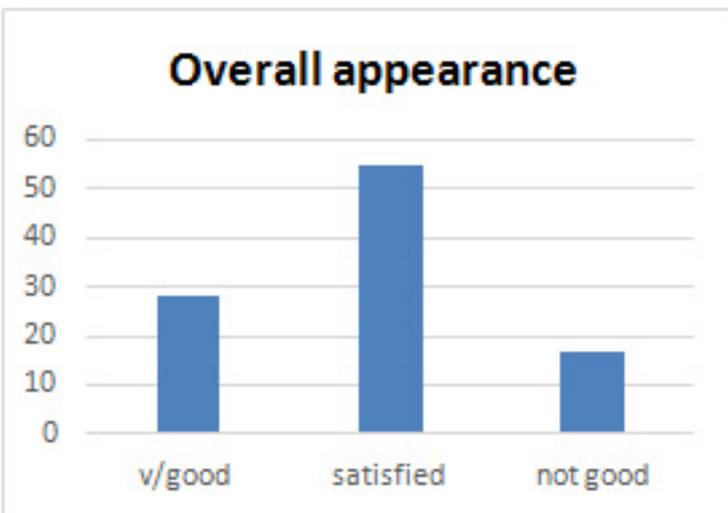


Figure 5

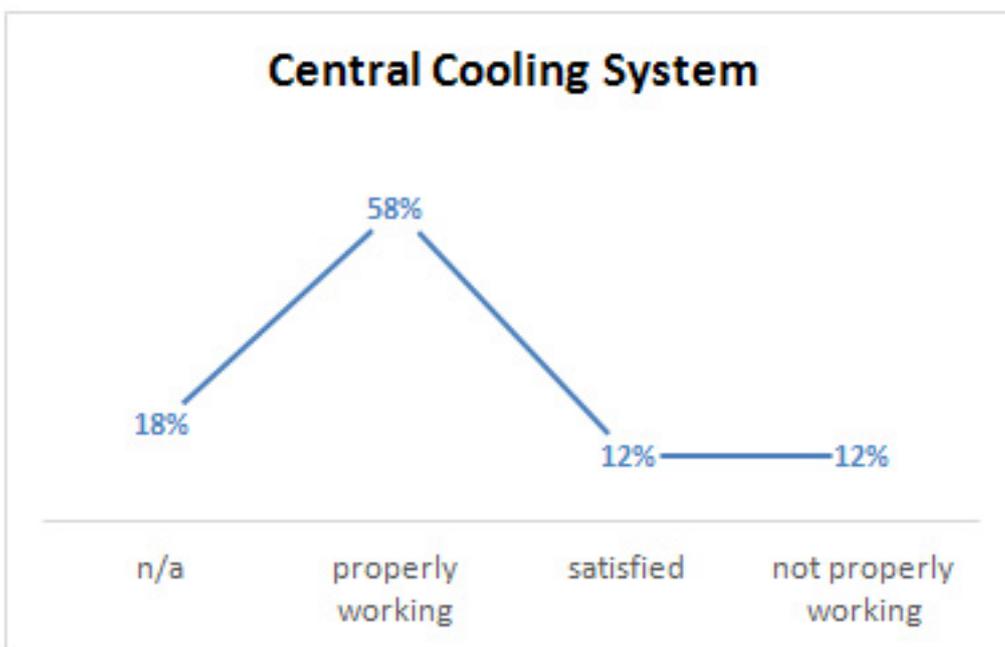
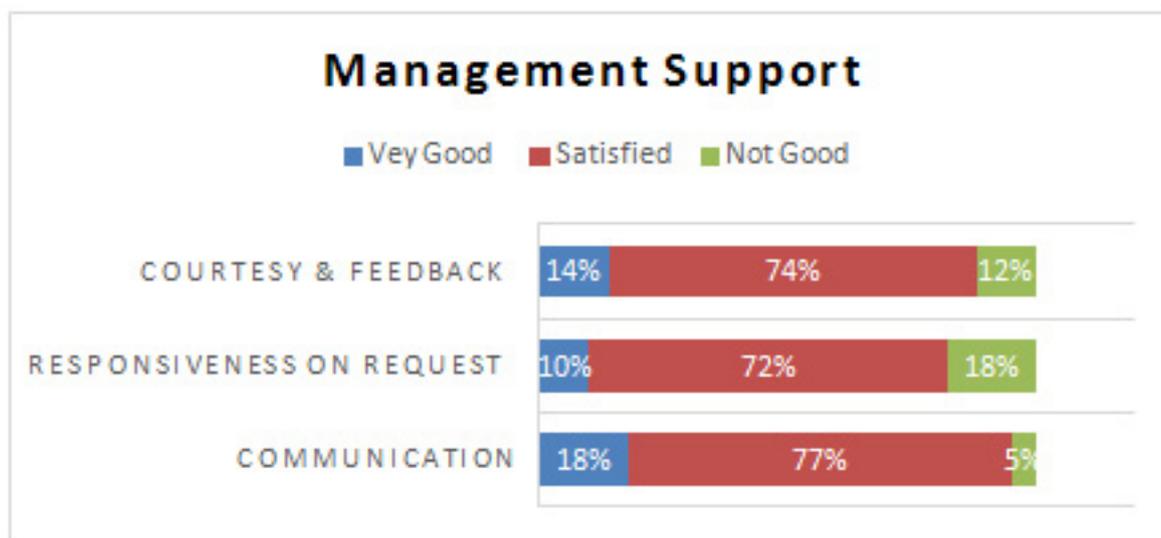


Figure 6



Figure 7



available nearby, either private or publicly owned. Residents were also asked about their participation related to the landscaping outside of the property. Those who lived in a villa tend to participate in the landscaping activities whereas those who rent a flat in an apartment block rely on the building facilities and management department. Tenants were asked about the cooling system in general (including both split system and central cooling), and most of the respondents were satisfied since the severe weather conditions during summer months required a properly working cooling system (see Figure 5).

In response to the available parking facility, around half of the respondents were satisfied with the available parking facility, either free, off-street or paid parking (note: pre-paid parking is only for those tenants who could produce Tawtheeq documentation (see Figure 6). Visitors' parking is usually paid unless

tenants live off Abu Dhabi Island or in Villas. Many respondents raised the concern that on the Abu Dhabi Island, despite having pre-paid parking permits, most of the tenants find it hard to find parking, especially in the localities where there are too many apartment buildings.

Figure 7 presents the responses which relate to the interaction with the management of the rental properties, either villa or apartment block. Tenants were asked questions to score their satisfaction for the three criteria: communication management with the tenants, responsiveness in the case of emergency or queries, and courtesy. The majority of the respondents felt either satisfied or very happy in the above areas when interacting with the management. This shows the professionalism of the management company staff as well as the maintenance and repair services, which are mostly required on a daily basis.

Figure 8



There were some other questions, which were related to finding the responses related to the internal condition of the property and proximity to the amenities such as shops and malls. For the internal condition, a tiny percentage replied they were not satisfied, but the majority were satisfied with the condition. This again demonstrates the maintenance and care provided by the management company to the tenants to keep the internal conditions of the property satisfactory.

The most pressing issue was related to dealing with the estate agents. Although many efforts have been made by the municipality to crack down on illegal agents, more than half of our respondents (see Figure 8) had horror stories about the unprofessional rental estate agents who try to take their money in the name of their commission. The stories were either related to demanding a cash deposit during the first visit to secure the property, or showing property for which one can not apply for with Tawtheeq documents, or offering paid service to arrange false Tawtheeq documents or asking more than 5% commission from the tenant, etc. In most of the cases, despite proper documentation and introduction to the landlord, the agent disappeared once the lease contract was signed with their cash commission. (Note: the commission is usually 5% of the rental price and minimum AED 5000, paid by the tenant). The Abu Dhabi municipality is still cracking down on many bogus rental estate agents who mostly advertise through either social media or rental listing websites (both free and paid).

Summary

This paper presented findings from a research survey done in the city of Abu Dhabi in the UAE to gauge the level of satisfaction of the tenants, especially expatriates. The results show that overall tenants are satisfied with the type and condition of the dwellings available for rental and very few have issues with parking. Due to being relatively small compare to Dubai, the city of Abu Dhabi does not have any issues for its residents as

far as access to public transport and the public roads are concerned. Dealing with the managing company or officer was not an issue and properties were managed efficiently, including both interior and exterior of the properties. The most critical factor which tenants were concerned about when it came to rental properties was the appropriate cooling system because of long and harsh summers. The majority of respondents had no significant issues with it. The only highlighted issue where more than half of them showed dissatisfaction was dealing with the estate agent, and in many cases, it was inferior. The municipality has already taken actions to reduce such experiences resulting in dissatisfaction, by cracking down on illegal businesses offering accommodation for rental purposes.

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As long I live

Lost in my nonstop mind
Spinning around and around
Thinking and thinking
Wondering and questioning
Can't stop, can't remember why
Waiting and waiting
For the peaceful mind
Tranquility
Don't like to be lead, nor decided
I am done with this feeling
Of the unrest and its killing me
I am not the same person, but still I am
Self fight, self cry and conflict
Have not looked back
Needing emotional stability
A warm life of oneself
A self satisfaction, and say for myself
For my life, only my life, as it really matter
Some lessons have actually been learnt
You can't be with the wrong and the untrue again
All are just selflessness and greediness
Need to move on alone
Will make the journey lonely
And I can live
And I will be over



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