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The effective creation of social value in infrastructure delivery

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1 **The Effective Creation of Social Value in Infrastructure Delivery**

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26

27 **Abstract**

28

29 The need to create social value during the delivery of infrastructure projects is growing in
30 importance. However, it can be argued that the initial expectations of stakeholders at the
31 outset of projects not being achieved once the project is delivered. At present there is no
32 consistent and widespread methodology for the successful delivery of social value
33 outcomes. The problem therefore exists that despite infrastructure having the potential to
34 play a transformative role in the creation of social value; current outcomes are arguably
35 not as effective as they could be. The aim of this research is to understand how social
36 value is currently created and delivered in gas infrastructure works. Through the use of
37 five case studies of small community-based gas infrastructure projects that are part of a
38 wider nationally significant network, the tensions at the heart of social value delivery are
39 revealed. How the social value agenda moves through project stages is revealed as key
40 to minimising social value barriers and ensuring successful social value delivery. The
41 results serve as important lessons for ensuring infrastructure projects effectively create
42 and deliver desired social value outcomes successfully.

43

44 **Keywords chosen from ICE Publishing list**

45 Keyword 1: Social Impact

46 Keyword 2: Sustainability

47 Keyword 3: Procurement

48

49

50

51 **1. Introduction**

52 Since the introduction of The Public Services (Social Value) Act (2012) organisations wishing to
53 secure public sector engineering, infrastructure and construction projects need to demonstrate
54 their Social Value credentials (Watson et al., 2016). The Act places a legal obligation on public
55 sector bodies to consider the Social Value each tenderer offers, and ensure this consideration is
56 given appropriate weighting in the comparison and analysis of returned tenders. However, as
57 there is no widely accepted succinct definition of what the term Social Value relates to, each
58 public sector client, construction and engineering company may differ in their interpretation
59 (Watts et al., 2019). Therefore, the knock-on effect of engineering companies trying to engage
60 with this ambiguous and sometimes obscure concept is that there is no consistency in the
61 approaches and methodologies adopted for delivering Social Value. This is problematic in

62 engineering, infrastructure, and construction projects as it often results in stakeholder
63 expectations not being achieved (Watts et al. 2016). Such stakeholders can include the client,
64 end user, local community and even the internal project team tasked with Social Value delivery.
65 Therefore, despite the potentially transformative role the engineering industry can have on
66 Social Value delivery, the ultimate outcomes and benefits are not as effective as they could be.
67

68 In addition to the legal obligations the Act places on public sector clients, many clients and
69 companies operating in the private sector now fully embrace the requirements of the Social
70 Value Act (2012) with the public sector often seen as leading the way in best practice (Preuss,
71 2007). A moral argument is also emerging with regards to Social Value engagement by
72 businesses, with Social Value now expected as a standard behaviour of a responsible business.
73 However, despite Social Value behaviours increasingly expected by engineering and
74 infrastructure professionals, such as creating work experience opportunities, focusing on local
75 supply chain spending and increasing employment amongst under employed groups in society,
76 there is a lack of contemporary research focus on the Social Value generated and delivered
77 during the completion of infrastructure and engineering works, especially gas and energy
78 projects. This is an important research gap that needs to be addressed as gas infrastructure
79 projects pose their own unique requirements and challenges to wider construction industry
80 works.

81
82 This paper first outlines the main areas of the literature that relate infrastructure and engineering
83 works, and specifically the gas industry, as well as discussing social value and its increasing
84 need to be evidenced for all engineering and infrastructure works. The research methodology
85 and methods employed are then outlined, and how through the use of multiple case studies of
86 small gas and engineering infrastructure projects, this paper seeks to understand how Social
87 Value is currently created and delivered in energy infrastructure works. The findings of this
88 paper are then presented and discussed including how they address a gap in current research
89 regarding the perceptions and interpretations of engineering and infrastructure professionals in
90 how social value can be effectively created and delivered. The findings reveal practical benefits
91 that can be employed by engineering and infrastructure professionals to minimise the barriers

92 faced in Social Value delivery and maximise the Social Value benefits that can be successfully
93 achieved.

94

95 **2. Literature Review**

96 Infrastructure has been described as the “bedrock for development in any country” (Agyekum et
97 al., 2019, p87). Infrastructure works include the structures and assets that enable a society to
98 function including those pertaining to engineering, construction, transport, and energy works. In
99 the UK, the engineering, infrastructure, and construction industry contributed £117 billion to the
100 economy, accounting for 6.1% of the total and representing 6.6% of total employment with over
101 2.4 million jobs (Rhodes, 2019). Investment in infrastructure is linked to economic advancement
102 and indirect benefits including reducing trade and transactional costs, and increasing
103 production, productivity, and employment (Adelekan et al., 2013). Ultimately, investment in
104 infrastructure reduces poverty and spurs economic growth (Agyekum et al., 2019). In the UK,
105 government data shows that the contribution of the engineering, infrastructure and construction
106 industry to the UK economy has increased year on year from 2009 - 2018, both as a percentage
107 of economic activity (from 5.6% to 6.1%) and in financial terms (£80 billion to £117 billion)
108 (Rhodes, 2019).

109

110 Investing the required amount of funds into infrastructure so that development levels meet
111 demand can prove overwhelming for many countries and governments. This inevitably leads to
112 finance levels being described as inadequate and situations arising where those who do invest,
113 seek to maximise the benefit such investments achieve and minimise any associated risks
114 (Adelekan et al., 2013). As part of drives to maximise the benefits achieved from infrastructure
115 investment, infrastructure clients are increasingly seeking to create and deliver Social Value for
116 the stakeholders involved. Indeed, Highways England commissioned research with the specific
117 intent to consider how Social Value could be enhanced on its projects for the benefit of all
118 stakeholders (Daniel and Pasquire, 2017).

119

120 As engineering works are described as a critical part of national infrastructure (Aldhaheeri et al.,
121 2018). in that they allow people to live, travel, and work safely and comfortably, it could be

122 argued the very nature of the industry creates and delivers Social Value through the end results
123 produced. However, despite this argument, for the past half a century there has been an
124 increasing focus on the Corporate Social Responsibility (CSR) of organisations operating in the
125 engineering, infrastructure, and construction industry (Barthorpe, 2010). The concept of CSR is
126 one that incorporates an organisation's economic, legal, ethical, and philanthropic
127 responsibilities (Carroll, 1999). Whilst legal compliance can perhaps be more easily evidenced,
128 the target(s) of economic, ethical and philanthropic activity can be harder to determine, but are
129 often viewed in regards to an organisation's triple bottom line; how they report on their
130 economic, environmental and social impacts (Lunenberg et al., 2016). Within the construction
131 industry CSR has been described as the consideration organisation's give to the impacts of their
132 operations upon society and the environment (Barthorpe, 2010). Whilst there have been
133 arguments the industry was behind others in how organisations operating within it adopted CSR
134 practices (Glass, 2012), there can be no argument that CSR is not being increasingly focussed
135 upon by engineering, infrastructure and construction organisations. The KPMG 'Survey of
136 Corporate Responsibility Reporting 2017' (KPMG, 2017) revealed 69% of construction
137 companies reported on CSR in 2017, up from 32% in 2008 (KPMG, 2011).

138

139 When discussing and embracing the concept of CSR, organisations generally have historically
140 tended to focus upon the environmental and economic aspects (Carroll, 2015). One possible
141 explanation for this is that economic and environmental factors can be more easily measured
142 and expressed in numerical terms. For example, currency is used to measure economic
143 performance, and environmental impacts can be measured and communicated in tonnes of
144 CO₂, number of trees planted and as percentages of recycled materials used. Social value on
145 the other hand has often proved difficult to measure and so has tended not to be focussed upon
146 by organisations until fairly recently (Watts et al., 2019). However, there has been a drive over
147 the past few years for organisations to have a greater focus on the social value aspects of CSR,
148 notably with the introduction of the Public Services (Social Value) Act (2012).

149

150 Starting life as a Private Members Bill the Social Value Act gained Royal Assent in 2012 and
151 compels public sector bodies to consider the additional social value that can be achieved

152 through their procurement activities. Traditionally engineering, infrastructure and construction
153 works were awarded on the iron triangle of criteria: cost, time, and quality (Wong et al., 2012).
154 The Social Value Act (2012) sought to encourage a shift away from this iron triangle to include
155 social value as a fourth criteria on which to judge returned tenders. Social value can be broadly
156 described as a concept that is actionable which adds benefit to society (Kuratko et al., 2017).
157 Examples can include organisations purchasing only fair-trade products, requesting
158 employment opportunities be created with all goods and services procured, and a focus on
159 recruiting from disadvantaged and marginalised groups in society (Loosemore, 2016). However,
160 it is in defining social value that problems with its delivery are revealed. It is argued that social
161 value is a heavily subjective concept with different stakeholders each potentially holding a
162 different fixed interpretation, with such variability between stakeholders fuelling the concepts
163 subjective nature (Loosemore and Higgon, 2016). Therefore, when these stakeholders attempt
164 to reach an agreement over its meaning, problems arise. This can include trying to determine
165 exactly what initiatives efforts should be focused upon and agreeing when targets have actually
166 been achieved. Even in circumstances where an agreement over a definition is reached
167 between stakeholders as to what Social Value pertains to, measuring this Social Value can
168 again prove difficult (Watts et al., 2019).

169

170 Ensuring the social value envisaged and agreed during procurement is then delivered during the
171 project works has also proven to be difficult (Loosemore, 2016). This can be the result of
172 internal communication challenges with the strategies set at management level not the
173 strategies delivered at operational level (Watts et al., 2015). It can also be the result of
174 communication breakdown between stakeholders due to the subjective and ambiguous nature
175 of Social value (Loosemore and Higgon, 2016). Somewhat irrespective of the difficulties in
176 agreeing, delivering and measuring Social Value, it is now an expectation in the procurement of
177 many public sector projects, and so a failure to engage with social value could ultimately result
178 in a failure to win work (Loosemore, 2016). Whilst many studies have evidenced the rising
179 importance of Social Value in construction procurement (Watts et al., 2016), it is also a growing
180 expectation in the procurement of infrastructure and engineering works. However, delivering
181 Social Value is a relatively recent expectation in engineering projects, with limited studies

182 evidencing how social value is achieved, and the impact it has, in projects such as gas
183 infrastructure works (Daniel and Pasquire, 2017). This is surprising given the impact and extent
184 gas infrastructure works have on the UK and therefore the potential for the positive impacts
185 generated from an increased focus on Social Value. Understanding how to maximise social
186 value benefit in infrastructure is especially important given the significant investment in
187 infrastructure planned (Dobson, 2020). It is important however, to clearly distinguish between
188 the Social Value that arises from infrastructure works being undertaken and the 'additional'
189 Social Value that can be created by the project teams involved in the delivery of the works as a
190 result of their decisions and actions. Therefore, infrastructure works need to focus on additional
191 social value creation now more than ever to help rebuild economies in the face of socio-
192 economic challenges and the Covid-19 pandemic (Dobson, 2020). Covid-19 is a respiratory
193 illness that was first detected in 2019 and quickly spread around the world leading to the UK,
194 amongst many countries, to impose a lockdown that restricted the population from any
195 unnecessary travel and prevent many industries from operating (Watts, 2020). Whilst the UK
196 construction industry was one of the first industries to be allowed to resume operations, the
197 results of the wider lockdown served to plunge the UK into its first recession in over a decade
198 and reduce economic output by over 20% (Watts, 2020).

199

200 At present, however, there is no consistent and widespread methodology for the successful
201 delivery of Social Value outcomes in infrastructure works. This is leaving infrastructure projects
202 at a disadvantage, as engineering professionals are expected to create and deliver Social Value
203 with limited research backed guidance on how to do so effectively. Although this guidance is
204 growing with the release of the report 'Maximising Social Value from Infrastructure Projects'
205 (Dobson, 2020), it is still in its infancy when compared to the body of Social Value research that
206 is primarily construction project focused. However, one study that compared some of the
207 existing construction focused Social Value literature, guidance documents, and measurement
208 tool attempts found that these often serve to confuse and restrict the development of Social
209 Value due to their conflicting and ambiguous nature (Watts et al., 2019).

210

211 This research is positioned at an underrepresented cross section in the literature of Social Value
212 creation, UK based energy infrastructure and individual gas projects that form part of a wider
213 nationally significant network. Smaller gas projects, that are of high significance to the UK
214 economy, but of low individual value when compared to national and international gas projects
215 are often overlooked in research with a paucity of papers focussing upon the importance of
216 these projects. Where gas and infrastructure research is conducted it is often with a focus on
217 the international markets (see Aldhaferi et al., 2018). When a more nuanced national
218 perspective is adopted this is often with a focus on developing countries (see Kassem et al.,
219 2020). Previously when Social Value and infrastructure delivery were discussed, it was often the
220 societal benefit that derives from use of the actual infrastructure asset itself that was focused
221 upon. The additional Social Value created during the completion of the infrastructure project by
222 the construction professionals involved was often not considered in great detail. Recent
223 research has started to build in this area (see Dobson, 2020) but there remains a gap in current
224 research this paper seeks to address and explore with the aim of understanding how Social
225 Value is currently generated and delivered on national and regional UK gas infrastructure
226 projects.

227

228 **3. Methods**

229 Social Value is often considered a subjective concept as it allows different interpretations to
230 exist across numerous stakeholders simultaneously (Watts et al., 2019). This social construction
231 of meanings determines that a constructivist ontological perspective is adopted which ultimately
232 dictates a qualitative research design (Bryman, 2016). As this research asks 'how' a
233 contemporary issue is addressed and is concerned with witnessing and not controlling real
234 world behaviours within a particular context, Yin (2018) proposes that case study as a research
235 method will be suitable (Yin, 2018, p9). A case study allows for a detailed and intensive
236 investigation to occur over a period of time and is a widely used research method in the areas of
237 business and management (Bell et al., 2019). Case Studies can be effectively used to gain
238 qualitative data for inductive research (Walliman, 2016).

239

240 For this paper a multiple case study approach was adopted where five small community-based
241 gas infrastructure projects, that were part of a wider nationally significant network, were
242 analysed in 2019. Each of the case studies were similar in scope in that they were a project that
243 involved the cleaning of existing gas pipes and assets with grit blast, painting of the newly
244 cleaned gas pipes and assets, where the condition of pipes were assets were deemed beyond
245 repair they were removed, and newly fabricated pipes installed in their place. Remedial works at
246 each of the sites including installing security bollards, gates and fencing, as well as tarmac and
247 paving works and installation of new doors and roofs on housing units. The details of the five
248 projects can be found in Table 1.0.

249

250 [INSERT TABLE 1.0 HERE]

251

252 All projects had been recently completed at the time the research was conducted and so the
253 social value aspects of the procurement documents issued to the contractor were also
254 analysed, as well as the social value related tender documents returned, social value related
255 extracts of signed contract documents and a complete set of meeting minutes for each project.
256 A thematic analysis was then conducted of all documents. A thematic analysis is an analytical
257 process of interpreting qualitative data through the use of identifying themes explored in the
258 data before categorising and comparing these themes through the process of allocating codes
259 (Grey, 2018). From the thematic analysis all applicable content was coded, and then the content
260 of each code grouped under appropriate category headings. The codes used at both stages
261 were those that emerged from the analysis and allowed a comparison to take place across all
262 five projects to identify any key themes, as well as any similarities and differences in social
263 value expectations, creation, delivery and success. Examples of the codes that emerged include
264 'Social Value Perceptions', 'Decisions Made', 'Project Success', and 'Social Value Actions',

265

266 For each of the projects, separate interviews were then conducted with the client's Project
267 Manager (PM) and Quantity Surveyor (QS) as well as the contractor's PM and QS. Twelve
268 interviews were conducted in total as where the teams were involved in multiple projects their
269 views were ascertained on all projects as part of the same interview. All interviews were

270 conducted via phone and lasted between 30 and 60 minutes. Notes were taken during the
271 interviews of all answers as it was felt phone recording may be off-putting to those professionals
272 who have not experienced recorded interviews previously. Questions asked included 'How
273 would you describe Social Value?', 'Can you describe the Social Value delivered on the
274 project?', 'Were you happy with the amount of Social Value created?', and 'Who do you think is
275 best placed to decide upon the Social Value to be delivered?'. A process of narrative analysis
276 was then undertaken to structure the interviews questions and used as a method of. Narrative
277 analysis is a process whereby information is requested and discussed in the form of stories to
278 allow a deep insight into an individual's perceptions ad interpretations (Sandelowski, 1991). For
279 example, when the question was asked 'Can you describe the Social Value delivered on the
280 project?' the PM from Contractor Y replied "...On [Project 5] we actually achieved a lot in the
281 end...with the trees we planted around the perimeter of the site, the clean-up of the local
282 woodland, and primary school talk we gave...".

283

284 This helped reveal the perceptions of social value held by those members of the project team
285 that were interviewed. The results of the narrative analysis were then manually grouped by the
286 researchers into key themes and headings that emerged during the interviews. This included
287 the perceptions of the successes, failures, barriers, and activities of social value for each of the
288 projects relating to any tensions, delivery issues, communications, and actions each
289 professional experienced. The results of the narrative analysis were then contrasted and
290 compared with the results of the thematic analysis, so a richer more detailed picture of social
291 value could emerge from each of the case study projects, and key lessons could be extracted
292 as to how social value can be effectively delivered in gas infrastructure works.

293

294 **4. Results and Discussion**

295

296 Analysis of the results found that the engineering professionals interviewed perceived their
297 actions created additional Social Value, and that Social Value is a concept that is actionable and
298 adds benefits to society, reinforcing definitions provided in the literature (Kuratko et al., 2017).

299 The professionals interviewed believed it was their choices and decisions made whilst delivering

300 gas infrastructure projects that impact upon the amount of Social Value generated. Whilst the
301 interview results did reveal Social Value is a subjective concept, reinforcing findings in the
302 literature (Loosemore and Higgon, 2016), they also build upon existing findings that clients are
303 seeking to maximise Social Value benefits for infrastructure stakeholders (Daniel and Pasquire,
304 2017). There was also a broad consensus across all interviewees regarding the specific
305 challenges gas infrastructure projects pose to the creation of additional Social Value. Whilst all
306 those interviewed espoused the resulting benefits from the completion of their respective
307 projects, the all described the process of creating 'additional' Social Value as often difficult given
308 the overall short duration of each project, specialist and high risk nature of the works, and often
309 the relatively low project values restricting additional budgetary spend. It was reported that
310 many Social Value initiatives considered were deemed unsuitable for their projects based on
311 these points. This included offering work experience opportunities and creating longer term jobs
312 via apprenticeship positions, both of which were described as 'common' by some interviewees
313 amongst wider stakeholder expectations when it came to delivery Social Value.

314

315 The results also indicate that if all engineering professionals involved with the project delivery
316 have similar Social Value perceptions, then all professionals believe more social value will be
317 created during the works, and all were more likely to be satisfied with the effectiveness of the
318 social value delivered and judge the social value creation and delivery to be a 'success'.
319 However, if the engineering professionals involved had different interpretations of Social Value,
320 or where the responsibility for social value rested, then the professionals were more likely to
321 report feelings of being unsatisfied with the amount and type of social value created. This
322 manifested itself as an increase in the tension that exists at the heart of the social value
323 concept. The consensus amongst all those interviewed was that the clearer the social value
324 responsibility agreed at tender stage, the better the delivered outcomes were during the
325 infrastructure works themselves. However, analysis and comparison of all the collected data
326 revealed that the professionals involved with the project delivery often had differing
327 interpretations of where the ultimate responsibility for the delivery of social value rested. For
328 Projects 1 and 3 the client PM's and QS's all believed that the detail of the social value to be
329 created was best led by the contractor's team as they were the ones with responsibility for the

330 social value delivery. However, in these cases the contractor team's (for contractors X and Y)
331 disagreed and believed all social value initiatives were best led by the client's team, as they had
332 ultimate accountability for the project and defined the scope of works required. In these cases,
333 those involved reported an increase in the tensions felt around social value and that the projects
334 had a lack of direction around the types of social value to be created and how it should be
335 delivered. Such tensions and perceived lack of project direction were arguably due to the
336 conflicting understandings around the ultimate responsibility for social value delivery,

337

338 Conversely, both the client and contractor professionals involved in projects 4 and 5 all agreed
339 that the ultimate responsibility for determining what sort of social value should be created and
340 how it should be created rested with the client's project team, but that as the contractors team
341 would be the ones delivering to the social value targets, all decisions should be jointly agreed.

342 This was evidenced in their tender documents which had clear, yet somewhat incomplete,
343 information pertaining to the social value expectations and requirements of the project.

344 However, in these cases the social value created and delivered was described in much more
345 effective terms with very little tensions reported from either the client or contractor team.

346 Interestingly, project 5 (where social value was described as effective and tension free) and
347 project 3 (where social value tensions were reported), both had contractor Y on site. When this
348 was discussed with the contractor it became apparent that the contractor believed if leadership
349 was taken by the client when it came to social value creation, the contractor felt more able to
350 direct their resources at the social value requirements and ensure effective social value was
351 created and delivered, and this was confirmed in their behaviours on project 5.

352

353 The findings also revealed that effective social value creation and delivery was reported by both
354 the client and contractor team's when this consensus of responsibility existed, even if the
355 consensus was that the responsibility to create and deliver social value rested with the
356 contractor. In project 2, it was agreed between both the client and contractor team that the
357 contractor was best placed to create and deliver social value. This is the opposite approach
358 taken in projects 4 and 5 where it was agreed the client was best placed to manage the social
359 value, yet the same effective social value was reported. All professionals interviewed from

360 project 2 agreed that knowing who was responsible for the social value creation and delivery
361 allowed all parties to have a greater focus on the social value requirements which ultimately
362 resulted in the perceptions of a more effective delivery of social value. It appears a consensus
363 of opinion over who has ultimate control over social value delivery is a method of ensuring
364 effective social value creation, as when there is confusion and misconceptions amongst the
365 contractor and client, a barrier to effective social value delivery is created. This resonates and
366 builds upon earlier literature findings that management communication challenges can reduce
367 the effectiveness of Social Value strategies being delivered at project level (Watts et al., 2015).

368

369 Building upon this further, the results revealed that, even if a consensus is reached amongst all
370 parties, another barrier to effective social value delivery that emerged in the interviews amongst
371 all contractors was the result of a lack of clarity of social value requirements at tender stage by
372 the client. Even if it is the contractor who will have ultimate responsibility for the delivery of the
373 Social Value initiatives, and all parties are agreed on this, the client will still be instrumental in
374 ensuring the social value delivery is efficient and effective by ensuring any and all requirements
375 are clearly set out when the contractor is first engaged. This was described as a lack of
376 leadership direction that can create a barrier in the delivery of social value by limiting the
377 autonomy of the contractor. In such circumstances the contractor professionals have reported
378 as being unaware of the parameters within which they can operate when it comes to social
379 value. This uncertainty impacts the Social Value strategies made by the contractor as they are
380 often unsure of the client requirements and project expectations, and so therefore a barrier
381 around effective social value is created limiting the benefits that can be delivered. An example
382 of this from contractor Y, who discussed successful Social Value creation and delivery in project
383 5 where the clients team took leadership over the social value requirements but left the
384 contractor to deliver it. Yet in project 3 where the client put all requirements on the contractor to
385 lead, create and deliver the required social value, the contractor was unsure at the start of the
386 project exactly what social value expectation and requirements the client had. Despite examples
387 such as local spend and creation of apprenticeship positions being inserted in the contract,
388 questions remained which led to delays in enacting some social value activities and other

389 activities not going for enough to ultimately meet the clients expectations which were only
390 clearly revealed in meeting minutes towards the end of the project.
391
392 Finally, the interviews revealed that all social value requirements were ultimately viewed as a
393 'bolt on' to the requirements of the project, and that even though they did form part of the tender
394 requirements, they played a minimal role in contractor selection, and no immediate action was
395 taken if the contractual requirements were not met by the contractor. The enforcement of social
396 value requirements was therefore non-existent during the project once the contract was signed
397 and the project commenced. This could be accounted for by the literature arguments that Social
398 Value in infrastructure and engineering is a relatively recent requirement (Daniel and Pasquire,
399 2017) and so all parties are still perhaps getting used to the increased expectations and
400 requirements. A review of the contract documents revealed that all social value initiatives were
401 associated with KPI's, but these KPI's were not listed on the respective Activity Schedule's and
402 so therefore did not influence whether the projects could be signed off as complete and whether
403 full payment for works could be made. A general consensus amongst the client PM's and QS's
404 was that whilst social value was important, they were directed to include and achieve it by their
405 own management teams, but as they had little enforcement over its compliance they felt
406 somewhat 'toothless' when it came to ensuring the social value was achieved. In projects 2, 4
407 and 5 where more effective social value was reported, the clients PM and QS's all reported
408 feeling more in control of the social value delivery and ensuring the compliance of the
409 contractor, despite the fact in project 2 all the engineering professionals involved agreed the
410 contractor had control over the direction of the social value creation and delivery. The interviews
411 with all client PM's and QS's did reveal that although no imminent enforcement measures could
412 be taken during the projects for any social value KPI's, these all formed part of a wider
413 performance review and so would be considered by the clients when awarding future projects.
414 However, the consensus amongst all contractor PM's and QS's, regardless of if the social value
415 on their project was judged effective or not, was that even if they failed to deliver the social
416 value expected, it would not be used in any future contract considerations as the ultimate award
417 criteria remains time and cost.
418

419 Figure 1.0 is a visual representation of the findings, illustrating how barriers to effective social
420 value delivery on small gas infrastructure works can be avoided by the actions of the client and
421 contractor.

422

423 [INSERT FIGURE 1.0 HERE]

424

425 **5. Conclusions**

426

427 There are arguments that engineering, infrastructure and construction projects create social
428 value through their very delivery as they provide a tangible benefit to society (Daniel and
429 Pasquire 2017). Despite this, the creation and delivery of additional social value through the
430 actions of the client and project teams is increasingly expected by stakeholders. However, there
431 is a gap in existing literature around how such social value can be effectively created and
432 delivered in small gas projects, and the barriers construction professionals are faced with when
433 attempting to deliver social value. The aim of this research was to address this gap and help
434 understand how social value can be successfully created and delivered in gas infrastructure
435 works. Case studies of five projects with differing clients and contractors were examined,
436 consisting of interviews with both client and project staff and a review of all applicable contract
437 and project documentation.

438

439 The results revealed that some common Social Value initiatives are unsuitable for gas
440 infrastructure projects due to their high risk nature, relatively short programme durations and low
441 project values. The results also revealed that a failure of clients to ensure suitable mechanisms
442 are in place to monitor and enforce Social Value can lead to barriers in effective Social Value
443 delivery. A failure in client leadership of outlining the remit, parameters and expectations of
444 Social Value can also lead to the creation of barriers preventing effective Social value delivery,
445 and therefore clients should understand their responsibility at early stages of projects to ensure
446 barriers are minimised and Social Value can be effectively delivered. Finally, the results of this
447 research built upon existing literature and revealed that it is alignments between clients and
448 contractors in their Social Value understandings around the ultimate responsibility for Social

449 Value delivery that are key. It is somewhat regardless of where this ultimate responsibly lies,
450 either with the client or contractor, but it is of the upmost importance that both parties agree to
451 who will be creating and delivering Social Value that is key to successful Social Value creation
452 and delivery in gas infrastructure works given the unique challenges and barriers such works
453 face. These findings seek to serve as important lessons for clients and contractors seeking to
454 maximise Social Value during the completion of their projects.

455

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462

463 **8. References**

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