

1. Name	Sunita Panda
2.Submission Type	Principal investigator
3. Funding	Yes
4. Funder name	The caesarean birth strand of the MAMMI study was funded by HRB (grant number HPF-2016-1671) and Friends of the Coombe, The Coombe Hospital, Dublin. The MAMMI study was funded by the Health Research Board Ireland (HRB) (grant numbers: HPF/2011/18; HRA_HSR/2012/28). The caesarean birth audit is funded by the School of Nursing and Midwifery, Trinity College Dublin (Seed funding 2024)
5. Year project commenced and was completed	Original project (caesarean birth strand of the MAMMI study): 2013- 2019 Current project (caesarean birth audit): 2024 - ongoing
6. Research team and collaborators.	Give the name and job title of all members of the research team and any other collaborators involved in the research or associated impact activities. Briefly describe their contributions to the research. Name: Prof Déirdre Daly. Title: Professor in Midwifery, School of Nursing and Midwifery, Trinity College Dublin. Contribution: Research Supervisor and co-author Name: Prof Cecily Begley Title: Former Chair of Nursing and Midwifery, School of Nursing and Midwifery, Trinity College Dublin. Contribution: Co-author Name: Dr Paul Corcoran Title: Senior Epidemiologist, NPEC, UCC, Cork Contribution: Consultant statistician and co-author Name: Dr Louise Gallagher Title: Assistant Professor in Midwifery, School of Nursing and Midwifery, TCD Contribution: Co-author Name: Prof Richard Greene Title: Director of The National Perinatal Epidemiology Centre (NPEC) and Professor of Clinical Obstetrics, UCC, Cork Contribution: Co-author Name: Ms Claire O'Halloran Title: Assistant Director of Midwifery, Cork University Maternity Hospital, Cork Contribution: Co-author Name: Dr Nilima Pandit Title: CMM3 – MN-CMS Local System Administrator, Cork University Maternity Hospital, Cork Contribution: Co-author Name: Aviejay Paul Title: Data scientist, School of Nursing and Midwifery, TCD Contribution: Consultant statistician and co-author Name: Ms Niamh Healy Title: President of Cuidiú (Parent support charity) and Tutor on the Cuidiú antenatal teacher training programme Contribution: Co-author Name: Ms Clare Bacon Title: Member of the general public and a service user and a first-time mother Contribution: Co-author Name: Ms Sarah Watters Title: Research assistant Contribution: Co-author
7. Case study title	<i>(max 100 characters) describes impact not the research itself.</i>

	<i>Complexities in decision-making for first-time caesarean birth: a step towards future action</i>
8. Impact area	Short term: • New Knowledge Creation • Dissemination Long term: • Health & Wellbeing • Public Policy • Practice & Services
9 Outcome statement (150 words)	Unifying statement that captures the value of the activities. Statement that connects scholarly activities (work package actions) to their outcomes (Changes in knowledge and skills). While the terms outcome and impact are sometimes used interchangeably, there is an important distinction between the two. Outcomes are more immediate than most forms of impact. Outcomes can be considered intermediate steps towards longer term impacts.
150	The caesarean birth (CB) mixed method research involved a systematic review, quantitative data from first time mothers and qualitative (interview) data from women and clinicians. This led to four peer-reviewed publications in high impact journals, dissemination of findings at conference presentations and collaborative events with stakeholders and in teaching midwifery students. Qualitative findings led to knowledge creation through a video (https://www.youtube.com/watch?v=Q-2ufXDybuA) with testimonials from stakeholders. Findings gained attention from media nationally and internationally followed by invitation from clinicians to share the study findings at a clinical grand round attended primarily by obstetricians and midwives. Senior clinicians engaged in discussions for next step action to stop the rising rates of CBs. This led to the current collaborative research which was developed and co-designed with key stakeholders and members of public. The resultant current project aims to evaluate the pathway of care/events involved in arriving at the decision to perform a CB.
10. Summary of the impact	(120 words) A concise overview, avoiding jargon and technical language, clearly articulating the main impacts (and their reach and significance). Impact is a change or a benefit to the economy, society, culture, public policy or services, health, the environment or quality of life.
120	The four peer-reviewed publications contributed to generation of knowledge around complexities associated with the decision to perform a caesarean, dissemination of findings at international and national conferences, collaborative events and teaching undergraduate and postgraduate students. Dissemination resulted in initiatives among senior clinicians, key stakeholders, and women to engage in collaborative research and co-development of the current research that aims to evaluate the events involved in the decision-making process for CBs among first-time mothers. Media portrayal of findings on clinicians' views of factors influencing decision to perform CBs triggered discussions among clinicians and women. This enabled clinicians to reflect into decision-making process in day-to-day clinical practice. This created social awareness among women regarding their role and involvement in the decision-making process.
11. Scholarly activities	250 words These are the activities performed by the researchers linked to the identified impact on question 8. Examples of activities can be work package actions, workshops, new protocols, processes and systems. Connecting these activities to outcomes in the impact narrative illustrates the value to beneficiaries aligned with what the researchers wished to accomplish in undertaking these efforts.
249	Research activities involved systematic review, quantitative and qualitative research processes. These activities resulted in four peer reviewed publications in high impact journals and conference presentations attended by midwives, obstetricians and policy-makers.

	The systematic review aggregated and synthesised findings from all published literature presenting decision-makers' (clinicians') perspectives of factors influencing decision-making for CBs. A further comparison of literature evidence added to this new knowledge which specifically critiqued on women's involvement in and contribution to the decision to birth by caesarean. The quantitative findings added to the existing knowledge on factors associated with increasing the risk of having a CB. The qualitative findings from one-to-one interviews with first-time mothers and senior obstetrician and midwives gave an insight into the complexities associated with the decision to perform a CB. Prior to publication of these results, there were limited or no data on the decision-makers' perspective and women's views and involvement in the decision-making process for CB in an Irish context. This research resulted into change in attitude among clinicians and women. This was evident from clinicians reflecting into clinical practice, generated discussions among clinicians and women which led to the concept for the current project. The current project aims to evaluate the pathway of care in the process of arriving at a decision to perform a CB and has been co-developed and designed with key stakeholders and public patient involvement. Clinicians, a women's organisation representative and women worked with the researcher to co-develop the project and are committed to continue to collaborate.
12. Impact narrative	(500 words) This is the articulation of how the scholarly activities delivered upon the outcome and made progress against the impact area. To the greatest extent possible, the impact narrative should clearly state the ROLE played by the researchers, WHO benefited, HOW they benefited, WHEN that benefit occurred, And all this evidence must be corroborated by reasonable, appropriate, time bound EVIDENCE. The narrative is underpinned by the shared VALUES agreed between researchers, funder, host institution and stakeholders and the resulting content is delivered through an audience- appropriate format. The impact narrative will convey a message that something is different because of the researcher's activity or research outputs. Avoid jargon and technical language.
495	The scholarly activities included a systematic review, quantitative and a qualitative study as part of the mixed methods research. The systematic review aimed to get an insight into the decision-makers' perspectives of factors influencing decision-making for CB. Findings resulted into publication in a peer-reviewed high impact journal in 2018 followed by attention from Irish and International media and presentations at three international conferences. Clinicians benefited from these findings through discussions and reflection into clinical practice. The quantitative component involved collection of longitudinal data producing a thorough description of factors associated with the risk of having a CB. It shed a light into the risk factors for having a planned or unplanned CB across three types of maternity care: public, semi-private and private. The quantitative findings were published in a peer-reviewed high impact journal in 2021 and presented at three international conferences attended by midwives, obstetricians, researchers, and policymakers. Dissemination of findings benefited women and clinicians through new knowledge generation because prior to publication of this data, there was lack of published data on outcome for women in public and private care system and there was no peer-reviewed evidence of factors associated with the risk of having a CB focussing on first-time mothers in Ireland.

	The qualitative component of the study involved interviews with midwives, senior obstetricians and first-time mothers who had a CB to explore factors influencing decision-making for CB and women's involvement in the process. Findings have been disseminated through publication in a peer reviewed high impact journal in 2022, discussion in media, presentations at eight international conferences and collaborative events and embedded in teaching sessions for undergraduate and postgraduate midwifery students in Dundalk Institute of Technology and University College Dublin in 2020, University College Cork in 2021 and ongoing teaching in Trinity college Dublin since 2019. Clinicians, women, policymakers, researchers, and student midwives have been benefited following dissemination of the findings through intensified discussions and reflection into current practice. Findings from the research have, thus far, primarily manifest benefits for clinicians, researchers, policymakers and women by way of knowledge generation and dissemination to these groups. This was evident from senior obstetricians and midwives taking interest to collaborate on future projects and ongoing research and engaging in discussions around ways to reduce unnecessary CBs in Ireland. This led to generation of ideas for the current project which aims to evaluate the pathway of care/events involved in the decision to arrive at a CB for first-time mothers. The current research was also underpinned by Public and Patient Involvement (PPI) values with contribution from women and stakeholders in designing and co-developing the project and the audit tool. The benefit was evident following wider dissemination of findings and discussions in media around complexities associated with the decision-making for CBs and women's involvement/lack of involvement in the process. Finally, women expressed that they personally benefited from being part of the research and sharing their experiences. The research process communicated respect for women and a progressive approach to research.
	EVIDENCING IMPACT- 50 MARKS
13 Evidence (250 words)	What data corroborates the narrative credibly Think about the reach (policy makers), use (e.g. cited in policy) and relevance (e.g. what's different because of this evidence-informed policy?) of your scholarly activities and their outputs. It seeks to elicit both qualitative (e.g. quotes from service users) and quantitative data (e.g. number of citations) on what is different because these scholarly activities are in the world. The evidence types and sources should demonstrate that the activity has been valuable and generated benefits for the researcher, the academic community and/or external stakeholders. Case studies can be greatly improved with quotes that illustrate the impact, especially if they are from people with high profile and relevant job titles. A diverse approach to evidence types and sources is expected and encouraged.
250	The research resulted in four publications and has been cited in 137 peer-reviewed articles. These findings have been presented at 14 international conferences, discussed at international and Irish media and included in teaching midwifery students. Women in the study expressed that the research benefited them through reflecting into their experiences of their involvement and/or lack of involvement in the decision-making process. <i>"I don't think [I was involved in the decision-making process] ...I was going on medical advice and taking...the advice of professionals...I was just told that this is what's going to happen...I don't feel like I was given a choice or that it was my decision to kind of change my mind."</i> (Study participant) (Thesis excerpt) Stakeholders in their testimonials for press release following publication of qualitative findings said: <i>"This paper contributes to knowledge around decision-making in obstetrics and midwifery.... Many variables, including important human factors, influence these decisions and it is important to integrate these findings in obstetric, midwifery and service user education...."</i> (obstetrician)

	<i>"This is an incredibly important piece of research informing both policy makers and service users as to why our caesarean birth rates are so high and rapidly climbing...This research highlights the lack of partnership between providers and service users and indicates that the pregnant person is not-at the centre of their care. ...policy makers and those involved in implementing the National Maternity Strategy to take immediate action to curb our ever-increasing caesarean birth rate before it accelerates out of all control." (Women's organisation representative)</i>
14. Sources 150 words	This section captures the data sources used to corroborate the evidence to encourage transparency, reproducibility and rigour in impact assessment. It ensures that evidence is appropriate and substantiates the articulation of impact. (e.g. own data, focus groups, transcripts, emails, projects website) institutional websites, awards, scopus, altmetrics, news articles).
147	News articles: TCD news: https://www.tcd.ie/news_events/articles/fear-of-litigation-is-a-key-factor-in-decision-to-perform-c-sections/ RTE DRIVETIME https://www.rte.ie/radio/radio1/clips/21406405/ Irish Mirror https://www.irishmirror.ie/lifestyle/health/irish-researchers-find-most-maternity-13006775 Irish Times https://www.irishtimes.com/news/ireland/irish-news/fear-of-natural-birth-and-litigation-behind-rise-in-caesarean-sections-study-1.3581232 Science Business https://sciencebusiness.net/network-news/fear-litigation-and-perceived-safety-concerns-are-key-factors-decision-perform-c Irish Examiner https://www.irishexaminer.com/breakingnews/ireland/fear-of-litigation-a-key-influence-on-caesarean-section-rates-858858.html Times (Ireland) https://www.thetimes.co.uk/article/caesareans-used-because-doctors-fear-being-sued-pmbb6hcsu Breaking News.ie https://www.breakingnews.ie/ireland/doctors-choosing-c-sections-over-fears-they-will-be-sued-if-something-goes-wrong-with-traditional-birth-study-858987.html https://www.sciencedaily.com/releases/2018/07/180730104859.htm https://medicalxpress.com/news/2018-07-litigation-key-factor-decision-c-sections.html IRISH INDEPENDENT https://www.independent.ie/irish-news/health/doctors-fear-of-being-sued-is-partly-behind-rise-in-caesarean-sections-in-first-time-mothers-42278855.html IRISH TIMES https://www.irishtimes.com/health/2023/01/11/fear-of-litigation-a-factor-in-rising-caesarean-rates-irish-study-finds/ JOURNAL.IE https://www.thejournal.ie/caesarean-sections-first-time-mothers-research-5966657-Jan2023/ RTE News at One https://www.rte.ie/radio/radio1/clips/22194856/ TODAY FM NEWS https://www.todayfm.com/news/doctors-fears-of-being-sued-part-of-the-reason-ireland-has-high-c-section-rates-1418872 NEWSTALK BREAKFAST https://www.newstalk.com/podcasts/highlights-from-newstalk-breakfast/the-steady-rise-of-c-sections-for-first-time-mothers

	MIDLANDS103 NEWS https://www.midlands103.com/news/entertainment/rate-of-c-sections-is-increasing-by-30-every-year/ EXTRA.IE https://extra.ie/2023/01/13/news/c-sections-first-time-mothers Almetrics: Panda et al., (2018). Clinicians’ views of factors influencing decision-making for caesarean section: A systematic review and metasynthesis of qualitative, quantitative and mixed methods studies. https://www.altmetric.com/explorer/highlights?q=Sunita%20Panda%20PLoS%20one&scope=all&show_details=45649068 Panda et al., (2020). Influence of women's request and preference on the rising rate of caesarean section – a comparison of reviews https://www.altmetric.com/explorer/highlights?q=sunita%20panda%20midwifery&scope=all&show_details=122738055 Panda et al., (2022). Factors associated with cesarean birth in nulliparous women: A multicenter prospective cohort study. https://www.altmetric.com/explorer/highlights?q=sunita%20Panda%20birth&scope=all&show_details=129842018 Panda et al., (2022). Clinicians’ views of factors influencing decision-making for CS for first-time mothers—A qualitative descriptive study. https://www.altmetric.com/explorer/highlights?q=sunita%20panda%20plos%20one&scope=all&show_details=140617298 Thesis: Panda, S. (2020) Doctoral thesis. http://hdl.handle.net/2262/92790
15. research references	Include a list of references to (no more than 10) support the research (e.g. publications, web links, awards, review, peer review or other quality assurance processes. If referencing publications, please use APA referencing style and include a link and the DOI.
	Publications: Panda, S., Begley, C., & Daly, D. (2018). Clinicians’ views of factors influencing decision-making for caesarean section: A systematic review and metasynthesis of qualitative, quantitative and mixed methods studies. <i>PLoS ONE</i>, 13(7), 1-27. https://doi.org/10.1371/journal.pone.0200941 Panda, S., Begley, C., & Daly, D. (2020). Influence of women's request and preference on the rising rate of caesarean section – a comparison of reviews. <i>Midwifery</i>, 88, 1-8. https://doi.org/10.1016/j.midw.2020.102765 Panda, S., Begley, C., Corcoran, P., & Daly, D. (2022). Factors associated with cesarean birth in nulliparous women: A multicenter prospective cohort study. <i>Birth</i>, 49(4), 812-822. https://doi.org/10.1111/birt.12654 Panda, S., Begley, C., & Daly, D. (2022). Clinicians’ views of factors influencing decision-making for CS for first-time mothers—A qualitative descriptive study. <i>PLoS ONE</i>, 17(12), 1-18. https://doi.org/10.1371/journal.pone.0279403 Conference presentations: Panda, S., Begley, C., & Daly, D. (2018). ‘Factors influencing decision-making for caesarean section - An Irish perspective’. Oral presentation at COST Conference: From Birth to Health - Towards Sustainable Childbirth, Lisbon, Portugal, 17th September 2018. (Received the best oral presentation award) Panda, S., Begley, C., Corcoran, P., & Daly, D. (2020). ‘Factors associated with planned caesarean section among first-time mothers: findings from a multicentre cohort study in Ireland’. Oral

	presentation at the Trinity Health and Education International Research Conference (theConf 2020), School of nursing and Midwifery, Trinity College Dublin, Ireland, 4th March 2020 Educational and collaborative events ‘Caesarean section in nulliparous women: a mixed methods study of factors influencing the decision-making process and outcomes for women- The MAMMI Study Caesarean Section Strand’ to research faculty at the Gothenburg University, Sweden, 21st August 2018 ‘Caesarean section in nulliparous women: a mixed methods study of factors influencing the decision-making process and outcomes for women’ to clinicians at the Boston Medical Centre, USA, 10th January 2019 Awards Knowledge Exchange and Dissemination Scheme (KEDS) – 2018-030, Health research Board Ireland: Dissemination of research findings through a video. https://www.youtube.com/watch?v=Q-2ufXDybuA Shortlisted for HRB One2Watch Award. 10th October 2019
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